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Editorial

Welcome to the latest issue of Full Circle

Another full house this month with Python, Micro This Micro That, Latex, Stable Diffusion, and Inkscape.

We're bulging with reviews this month. We start, of course, with Ubuntu 24.04, move on to DSL 2024 (that's 'Damn Small Linux' for you youngsters out there) then Ubuntu Mate and Ubuntu Cinnamon 23.10. As you can see, Adam has been a busy boy! Interesting to see DSL making a reappearance in 2024. Back in the day, DSL took up a whopping 50MB and would boot on pretty much anything. Is it still relevant these days? I think so. There are still a lot of PC's out there that are 32-bit, have small hard drives, and not so much memory.

Elsewhere, I've written up a piece about my latest toy: Meshtastic. It's a free, open source, project that you install on a cheap device and it lets you send text messages by radio. No internet or phone signal required. I've managed to send text messages over a mile and a half with it in a city environment. Of course, any nearby devices can be used to relay messages in a mesh.

Don't forget: we have a Table of Contents which lists every article from every issue of FCM. Huge thanks to Paul Romano for maintaining: <https://goo.gl/tpOKqm> and, if you're looking for some help, advice, or just a chinwag: remember that we have a Telegram group: <https://t.me/joinchat/24ec1oMFO1ZjZDc0>. I hope to see you there. Come and say hello.

All the best! Ronnie ronnie@fullcirclemagazine.org



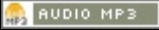
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NEWS

Submitted by ErikTheUnread

Full Circle Weekly News



<http://fullcirclemagazine.org/feed/podcast>

[http://www.stitcher.com/s?](http://www.stitcher.com/s?fid=85347&refid=stpr)

[fid=85347&refid=stpr](http://www.stitcher.com/s?fid=85347&refid=stpr)

<http://tunein.com/radio/Full-Circle-Weekly-News-p855064/>

<https://player.fm/series/the-full-circle-weekly-news>



week 17

Lunatik:

22/04/2024

The Lunatik project is developing tools that allow you to use the Lua language to extend the functionality of the Linux kernel and quickly write handler scripts that run at kernel level. A Lua interpreter is used, to execute the code, modified to work at the kernel level. The project code is written in C and is distributed under the MIT license.

Among the capabilities of the command line utility are commands for loading, unloading and reloading Lunatik modules in the kernel, displaying the status of loaded modules, viewing a list of scripts running in the kernel, running scripts, creating and stopping Lua runtime environments in the kernel, using the interactive shell REPL (Read –Eval–Print Loop). The project also provides a set of examples to evaluate the capabilities of Lunatik.

<https://github.com/luainkernel/lunatik>

Release of EdgeDB 5.0:

22/04/2024

A release of the EdgeDB 5.0, DBMS is available, which implements the relational graph data model and the EdgeQL query language, optimized for complex hierarchical data. The project is developed in the form of an add-on for PostgreSQL, it is written in Python and Rust (parser and performance-critical parts), and is distributed under the Apache 2.0 license. Client libraries are prepared for Python, Go, Rust, .NET, Elixir and TypeScript/Javascript. It also provides command line tools for DBMS management and interactive query execution (REPL).

<https://github.com/edgedb/edgedb/releases/tag/v5.0>

Release of Audacity 3.5:

22/04/2024

A new release of the free sound editor Audacity 3.5, has been published, providing tools for editing sound files (Ogg Vorbis, FLAC, MP3 and WAV), recording and digitizing sound, changing sound file parameters, overlaying tracks and applying effects (for example, noise reduction, changing tempo and tone). Audacity 3.5 was the fifth major release since the project was taken over by Muse Group. The Audacity code is licensed under GPLv3, with binary builds available for Linux, Windows and macOS.

<https://www.audacityteam.org/blog/audacity-3-5/>

NetBSD 9.4 released:

23/04/2024

The NetBSD 9.4 operating system has been published, which completed the maintenance cycle of the previous major branch 9.x. NetBSD 9.4 is categorized as a maintenance update and primarily includes fixes for issues and vulnerabilities identified since NetBSD 9.3 was published in August 2022. For those who value new functionality, a major release was recently released, NetBSD 10.0. Installation images of 507 MB in size have been prepared for download, available in builds for 57 system architectures and 16 different CPU families.

In addition to bug fixes in NetBSD 9.4, some new features, usually related to hardware support, have been moved from the NetBSD 10 branch. For example, support has been added for new MegaRAID controllers, Ethernet cards on the RTL8168GU chip and 3G modems ZTE MF112 and D-Link DWM222. Support for new AMD (zen3, zen4) and Intel CPUs (Comet Lake, Skylake-X, Cascade Lake) has been expanded. Added support for RAM disks in ZFS and CGD. Improved compatibility with QEMU assemblies for aarch64.

<https://www.netbsd.org/releases/formal-9/NetBSD-9.4.html>

Release of Nmap 7.95:

23/04/2024

The network security scanner Nmap 7.95 has been released. It is designed to conduct a network audit and identify active network services. The project code is supplied under the NPSL (Nmap Public Source License), based on the GPLv2 license, which is supplemented with recommendations (not requirements) for using the OEM licensing program and purchasing a commercial license if the manufacturer does not want to open the code of his product in accordance with the requirements of the copyleft license or intends to integrate Nmap into products that are not GPL compliant.

The terms of the NPSL license apply only to parties who accept the license in exchange for receiving special rights, such as the right to redistribute Nmap. In this case, the participating party can do whatever it wants under copyright provisions such as fair use, and the Nmap developers will not try to control their work.

<https://nmap.org/download>

Release of the Fedora Linux 40:

23/04/2024

Fedora 40 Workstation , Fedora Server , Fedora CoreOS , Fedora Cloud Base, Fedora IoT Edition and Live builds are available for download, delivered as spins with desktop environments, like KDE Plasma, Xfce, MATE, Cinnamon, LXDE, Phosh, LXQt, Budgie and Sway. Builds are generated for x86_64, Power64 and ARM64 (AArch64) architectures. The publication of Fedora Silverblue build is delayed.

<https://fedoramagazine.org/announcing-fedora-linux-40/>

Nginx 1.26.0 released with HTTP/3 support:

23/04/2024

After a year of development, a new stable branch of the high-performance HTTP server and multi-protocol proxy server nginx 1.26.0 has been published, which incorporates the changes accumulated in the main branch 1.25.x. In the future, all changes in the stable branch 1.26 will be related to the elimination of serious errors and vulnerabilities. Soon the main branch of nginx 1.27 will be formed, where the development of new features will continue. For ordinary users who do not have the task of ensuring compatibility with third-party modules, they recommend you use the main branch, where releases of the commercial product Nginx Plus are formed every three months.

<https://mailman.nginx.org/pipermail/nginx-announce/2024/EJFW6YFMCUODWQN7DZKIEKUTHKYXVZT2.html>

Release of TrueNAS SCALE 24.04:

24/04/2024

iXsystems has published the TrueNAS SCALE 24.04 distribution, which uses the Linux kernel and Debian (the company's previous products, including TrueOS, PC-BSD, TrueNAS and FreeNAS, were based on FreeBSD). Like TrueNAS CORE (FreeNAS), TrueNAS SCALE is free to download and use. The iso image size is 1.5 GB. The source code of TrueNAS SCALE-specific build scripts, web interface and layers are published on GitHub.

The Linux-based TrueNAS SCALE edition is now the main edition, and the FreeBSD-based TrueNAS CORE branch has been placed in maintenance mode, where they plan to fix bugs and security issues for many years to come. New features and new versions of components will be developed only in the TrueNAS SCALE branch. TrueNAS SCALE is not the only Linux-based FreeNAS option - in 2009, the OpenMediaVault distribution separated from FreeNAS, which was transferred to the Linux kernel and Debian.

<https://www.truenas.com/blog/truenas-scale-dragonfish-release/>

Release of QEMU 9.0.0:

24/04/2024

As an emulator, QEMU allows you to run a program compiled for one hardware platform on a system with a completely different architecture, for example, run an ARM application on an x86-compatible PC. In virtualization mode in QEMU, the performance of code execution in an isolated environment is close to the hardware system due to the direct execution of instructions on the CPU and the use of the Xen hypervisor or the KVM module in Linux, or the NVMM module in NetBSD.

The project was originally created by Fabrice Bellard to provide the ability to run Linux executables compiled for the x86 platform on non-x86 architectures. Over the years of development, support for full emulation was added for 14 hardware architectures, the number of emulated hardware devices exceeded 400. In preparing version 9.0, more than 2,700 changes were made from 220 developers.

<https://lists.nongnu.org/archive/html/qemu-devel/2024-04/msg03263.html>

Pale Moon browser 33.1.0:

24/04/2024

Pale Moon 33.1.0, branching from the Firefox code base to provide higher performance, preserve the classic interface, minimize memory consumption and provide additional customization options, is out. Pale Moon builds are created for Windows and Linux (x86_64). The project code is distributed under the MPLv2 (Mozilla Public License).

The project adheres to the classic interface layout, without switching to the Australis and Photon interfaces integrated into Firefox 29 and 57, and with extensive customization options. The removed components include DRM, Social API, WebRTC, PDF viewer, Crash Reporter, code for collecting statistics, tools for parental controls and people with disabilities. Compared to

Firefox, support for extensions using XUL has been returned to the browser, and the ability to use both full-fledged and lightweight themes has been retained.

<https://forum.palemoon.org/viewtopic.php?t%3D31085%26p%3D251221%23p251221>

Release of Proxmox VE 8.2:

24/04/2024

Proxmox Virtual Environment 8.2 has been published, a specialized Linux distribution based on Debian GNU/Linux, aimed at deploying and maintaining virtual servers using LXC and KVM, and capable of acting as a replacement for products such as VMware vSphere, Microsoft Hyper-V and Citrix Hypervisor. The size of the installation iso image is 1.3 GB.

Proxmox VE provides the means to deploy a turnkey, web-based, industrial-grade virtual server system designed to manage hundreds or even thousands of virtual machines. The distribution has built-in tools for organizing backups of virtual environments and clustering support available out of the box, including the ability to migrate virtual environments from one node to another without stopping work. Features of the web interface include: support for a secure VNC console; control access to all available objects (VM, storage, nodes, etc.) based on roles; support for various authentication mechanisms (MS ADS, LDAP, Linux PAM, Proxmox VE authentication).

<https://forum.proxmox.com/threads/proxmox-ve-8-2-released.145722/>

Nextcloud Hub 8 introduced:

25/04/2024

Nextcloud Hub 8, providing a self-sufficient solution for collaboration between enterprise employees and teams developing various projects, is available for download. At the same time, Nextcloud 29, which underlies Nextcloud Hub, was

published, allowing the deployment of cloud storage with support for synchronization and data exchange, providing the ability to view and edit data from any device anywhere on the network (using a web interface or WebDAV). The Nextcloud server can be deployed on any hosting that supports the execution of PHP scripts and provides access to SQLite, MariaDB/MySQL or PostgreSQL. Nextcloud source code is distributed under the AGPL license.

In terms of the tasks it solves, Nextcloud Hub resembles Google Docs and Microsoft 365, but allows you to deploy a fully controlled collaboration infrastructure that operates on your own servers and is not tied to external cloud services. Nextcloud Hub combines several open add-on applications on the Nextcloud cloud platform into a single environment, allowing you to collaborate with office documents, files and information to plan tasks and events. The platform also includes add-ons for accessing email, messaging, video conferencing and chats.

<https://nextcloud.com/blog/nextcloud-hub8/>

Release of Ubuntu 24.04 LTS:

25/04/2024

Ubuntu 24.04 "Noble Numbat" is out, which is classified as a long-term support (LTS) release, updates will be generated for 12 years (5 years - publicly available, plus another 7 years for users of the Ubuntu Pro service). Installation images are created for Ubuntu Desktop, Ubuntu Server, Lubuntu, Kubuntu, Ubuntu Mate, Ubuntu Budgie, Ubuntu Studio, Xubuntu, UbuntuKylin, Ubuntu Unity, Edubuntu and Ubuntu Cinnamon .

<https://lists.ubuntu.com/archives/ubuntu-announce/2024-April/000301.html>

Release of OSMC 2024.04-1:

27/04/2024

OSMC 2024.04-1, designed for creating a media center based on Raspberry Pi single-board computers or Vero set-top boxes developed by the distribution's developers, is out. The distribution is equipped with the Kodi media center and offers out of the box a complete set of tools for creating a home theater that supports video display in 4K, 2K and HD (1080p) quality. Two images are available for download; for direct recording to a USB drive or SD card, as well as specialized installers for Windows, macOS and Linux, allowing a novice user to install the distribution. Ready-made builds are created for Raspberry Pi 2, 3, 3+, Zero W 2, 4 and 400 boards, as well as for Vero 4K, 4K+ and V set-top boxes.

The distribution is based on Debian and supports installing packages from standard repositories. When working with the distribution, no knowledge of Linux is required; all configuration operations are performed through a graphical interface. The Raspberry Pi-based media center is proposed to be connected to the TV via the HDMI port and powered via the USB port, which is available on some TVs. Video playback uses hardware video decoding provided by the Broadcom VideoCore graphics accelerator.

<https://osmc.tv/2024/04/osmcs-april-update-is-here-with-kodi-v20-5/>

The Genode project has published Sculpt 24.04:

27/04/2024

The release of the Sculpt 24.04 project was announced, that is developing an operating system based on Genode OS Framework technologies, which can be used by ordinary users to perform everyday tasks. The source code of the project is distributed under the AGPLv3 license. A LiveUSB image of 30 MB in size is offered for download . It supports operation on systems with Intel processors and graphics with VT-d and VT-x extensions enabled, as well as on ARM systems with VMM extensions.

<https://genode.org/news/sculpt-os-release-24.04>

Web browser Min 1.32:

27/04/2024

A new version of the browser, Min 1.32 , has been published. It offers a minimalistic interface built around manipulation of the address bar. The browser is created using the Electron platform, which allows you to create stand-alone applications based on the Chromium engine and the Node.js platform. The Min interface is written in JavaScript, CSS and HTML. The code is distributed under the Apache 2.0 license. Builds are created for Linux, macOS and Windows.

The central control in Min is the address bar, through which you can send queries to a search engine (DuckDuckGo by default) and search the current page. As you type in the address bar, a summary of relevant information for the current request is generated, such as a link to a Wikipedia article, a selection from bookmarks and browsing history, as well as recommendations from the DuckDuckGo search engine. Each page opened in the browser is indexed and becomes available for subsequent search in the address bar. In the address bar you can also enter commands to quickly perform operations (for example, "!settings" - go to settings, "!screenshot" - create a screenshot, "!clearhistory" - clear your browsing history, etc.).

<https://github.com/minbrowser/min/releases/tag/v1.32.0>

Release of ncurses 6.5:

28/04/2024

After a year and a half of development, the ncurses 6.5 library has been released. It is designed for creating multi-platform interactive console user interfaces and supporting emulation of the curses programming interface from System V Release 4.0 (SVr4). The ncurses 6.5 release is source compatible with the ncurses 5.x and 6.0 branches, but extends the ABI. Popular applications built using ncurses include aptitude, lynx, mutt, ncftp, vim, vifm, minicom, mosh, screen, tmux, emacs, less.

<https://www.mail-archive.com/info-gnu@gnu.org/msg03279.html>

Release of EndeavourOS 24.04:

28/04/2024

The EndeavorOS 24.04 project is presented, which replaced the Antergos distribution, which was stopped in May 2019 due to the lack of free time among the remaining maintainers to maintain the project at the proper level. The installation image size is 2.7 GB (x86_64).

Endeavor OS allows the user to easily install Arch Linux with the required desktop, as intended by the desktop's original developers, without additional pre-installed programs. The distribution offers a simple installer for installing a basic Arch Linux environment with the default KDE desktop and the ability to install from the repository one of the standard desktops based on Mate, LXQt, Cinnamon, Xfce, GNOME, Budgie, as well as i3, BSPWM and Sway mosaic window managers. Work is underway to add support for Qtile and Openbox window managers, UKUI, LXDE and Deepin desktops. One of the project developers is developing its own window manager named Worm.

<https://endeavouros.com/news/plasma-6-with-wayland-or-x11-option-and-qt-6-ported-calamares-meet-gemini/%0D%0A>

Week 18

Release of Amarok 3.0.0:

29/04/2024

Six years after the last release, the Amarok 3.0.0 music player, which was very popular during the KDE 3 and KDE 4, was announced. The release is only available as source code. Amarok 3.0.0 was the first to be ported to the Qt5 and the KDE Frameworks 5 library. The project code is written in C++ and distributed under the GPLv2 license.

Amarok provides a three-panel mode of displaying information (collection, current composition and playlist), it allows you to navigate through the music collection, tags and individual catalogs, it supports dynamic playlists and quickly create your own playlists, it can automatically generate recommendations, statistics and rating of popular compositions, supports downloading lyrics, covers and information about compositions from various services, allows you to automatically generate recommendations, scripts and information messages about the script.

<https://invent.kde.org/multimedia/amarok>

Release of Shotcut 24.04:

29/04/2024

A new release of Shotcut 24.04 video editor, which is being developed by the author of the MLT project and uses this framework to organize video editing, is available. Support for video and sound formats are implemented via FFmpeg. It is possible to use plugins with video and audio effects, compatible with Frei0r and LADSPA. Features of Shotcut include, multi-track editing with the layout of video from fragments in various source formats, without the need for them to be imported or recoding. There are built-in tools for creating

screencasts, processing images from a web camera and receiving streaming video. Qt is used to build the interface. The code is written in C++ and distributed under the GPLv3 license. Ready-made builds are available for Linux (AppImage, flatpak and snap), macOS and Windows.

<https://shotcut.org/blog/new-release-240428/>

Lennart Pottering introduces run0:

29/04/2024

Lennart Pottering introduced the run0 utility, which allows you to perform actions/processes under the identifiers of other users. The new utility is positioned as a safer replacement of the sudo program, implemented in the form of a superstructure over the systemd-run command and allows you to get rid of the use of the executable file with the SUID flag. The run0 utility is included in the release systemd 256, which is currently at the stage of release candidate.

It is noted that the change of the identifier using the SUID flag in sudo involves additional risks associated with the fact that the SUID-process inherits the context of execution, including many properties controlled by an unprivileged user, environment variables, file descriptors, planner parameters and cgroup binding. Part of these properties are automatically cleaned for SUID processes by the core, and part by the application itself. However, in complex SUID programs such as sudo, people continue to regularly find vulnerabilities caused by inaccurate handling of external data that an unprivileged user can influence.

In run0, instead of using SUID, you are contacting a system manager requesting a command shell or process with the specified user ID, creating a new pseudo-terminal (PTY) and sending data between it and the current terminal (TTY). This behavior is more like a launch using ssh than performing using the classic sudo. The privileged process is triggered in an isolated context, which is generated by the PID 1 process rather than the user's process, i.e. does not inherit the properties of

the user's environment, except for the flow of the \$TERM environment variable.

Polkit is used to authorize and determine the user's capabilities in run0. The classical rule description language (/etc/sudoers) used in sudo is not supported. The functionality for running programs with other privileges is built into the systemd-run, and the run0 command is created as a symbolic link to the systemd-run, when using which a command line interface is provided.

Additional features of run0 include, an indication of increased privileges through the installation of a reddish background in the terminal and the addition of a red point to the window header. After cessation of execution with other privileges, the point disappears, and the background changes to normal. In addition, run0 supports all "systemd-run" options, for example, the parameter "--property," through which you can set arbitrary settings of the systemd services (for example, "CPUWeight-200 MemoryMax-2G IPAccounting-yes").

https://mastodon.social/@pid_eins/112353324518585654

Release of meta-distribution T2 SDE 24.5:

30/04/2024

The T2 SDE 24.5 meta-distribution has been released, providing an environment for creating your own distributions, cross-compiling and keeping package versions up to date. Distributions can be created based on Linux, Minix, MinGW, macOS, Haiku and BSD systems. Popular distributions built on the T2 system include Puppy Linux. The project provides basic bootable iso images with a minimal graphical environment in versions with the Musl, uClibc and Glibc libraries. More than 5,000 packages are available for assembly.

The release provides support for 25 hardware architectures: Alpha, Arc, ARM(64), Avr32, HPPA(64), IA64, Loongarch64, M68k, Microblaze, MIPS(64), Nios2, OpenRISC, PowerPC(64), RISCV(64) , s390x, SPARC(64), SuperH, i486, i686, x86-64 and

x32, for which 36 ISO images are generated (for some architectures, several build options are supported using Glibc, Musl or uClibc). Most architectures retain the ability to boot into environments with 512 MB of RAM.

<https://www.mail-archive.com/t2@t2-project.org/msg04077.html>

Release of OpenTofu 1.7:

01/05/2024

A new release of the OpenTofu 1.7 project has been presented, which continues the development of the open code base of the configuration management platform and automation of, maintaining the Terraform infrastructure . The development of OpenTofu is carried out under the auspices of the Linux Foundation using an open management model with the participation of a community formed from companies and enthusiasts interested in the project (161 companies and 792 individual developers have announced support for the project). The project code is written in Go and distributed under the MPL 2.0 license.

The fork was created in response to HashiCorp moving its products to a proprietary BSL 1.1 license, which restricts the use of code in cloud systems that compete with HashiCorp products and services. The change in license is explained by the desire to maintain funding for their developments in the face of the inability of classical licensing models to resist the parasitism of companies using ready-made open source codes of HashiCorp developments to create their own commercial cloud products without participating in joint development.

The platform can be used to build, modify and version infrastructure in accordance with the concept of infrastructure as code, in which the configuration of systems is described in a high-level domain-specific language and processed in a similar way to code. OpenTofu supports the construction of a resource graph that defines all connections between resources to effectively parallelize operations on resources and make changes based on dependencies.

OpenTofu also allows you to generate an Execution Plan based on a given configuration, which allows one to evaluate actions with the infrastructure before they are actually applied to the infrastructure. Complex changes to the infrastructure can be made automatically, with minimal administrator involvement, which avoids many errors caused by humans. At the same time, the administrator can fully monitor what exactly will be changed and in what order, using the provided execution plan and resource graph.

<https://opentofu.org/blog/opentofu-1-7-0/>

Release of LibreELEC 12.0:

02/05/2024

LibreELEC 12.0, that develops a fork of OpenELEC, is out. The user interface is based on the Kodi media center. Images have been prepared for loading from a USB drive or SD card (32- and 64-bit x86, Raspberry Pi 2/3/4/5, various devices on Rockchip, Allwinner, NXP and Amlogic chips). Build size for x86_64 architecture is 247 MB.

With LibreELEC you can turn any computer into a media center. The basic principle of the distribution is “everything just works”; to get a completely ready-to-use environment, you just need to load LibreELEC from a Flash drive. The user does not need to worry about keeping the system up to date - the distribution uses a system for automatically downloading and installing updates, activated when connected to the internet. It is possible to expand the functionality of the distribution through a system of add-ons that are installed from a separate repository developed by the project developers.

In addition to the standard Kodi capabilities, the distribution provides a number of additional functions aimed at maximizing simplification of operation. For example, a special configuration add-on is being developed that allows you to configure network connection parameters, manage LCD screen settings, and allow or disable automatic installation of updates. Also provided are features, such as using a remote control

(control is possible both via infrared and via Bluetooth), file sharing (Samba server is built-in), built-in BitTorrent client Transmission, automatic search and connection of local and external drives.

<https://libreelec.tv/2024/05/01/libreelec-nexus-12-0-0/>

Release of Red Hat Enterprise Linux 9.4:

02/05/2024

Ready-made installation images are available for registered users of the Red Hat Customer Portal (you can also use CentOS Stream 9 iso images and free RHEL builds for developers to evaluate functionality). The release is designed for x86_64, s390x (IBM System z), ppc64le and Aarch64 (ARM64) architectures.

The RHEL 9 branch is being developed with a more open development process and uses the CentOS Stream 9 package base as its base. CentOS Stream is positioned as an upstream project for RHEL, giving third-party participants the opportunity to control the preparation of packages for RHEL, propose their changes and influence decisions made. In accordance with the 10-year support cycle for the distribution, RHEL 9 will be supported until 2032.

The source code of RHEL 9.4 rpm packages are not posted in the public repository git.centos.org and are provided to the company's clients only through a closed section of the site, which has a user agreement (EULA) prohibiting the redistribution of data, which does not allow the use of these packages to create derivative distributions. The sources remain available in the CentOS Stream repository, but it is not completely synchronized with RHEL and the latest versions of packages do not always match the packages from RHEL. Rocky Linux, Oracle and SUSE reproduce the source rpm packages of RHEL releases as part of the OpenELA project

<https://www.redhat.com/en/about/press-releases/red-hat-simplifies-standard-operating-environments-across-hybrid-cloud->

KDE has removed the ability to install GNOME icon themes:

04/05/2024

Nate Graham, QA developer for the KDE project, has published a report on preparations for the KDE Plasma 6.1 release scheduled for June 18th, as well as the maintenance release 6.0.5 scheduled for May 21st. "This week we put some of the final Plasma 6.0 bugs to rest, and continued working towards Plasma 6.1 with a variety of UI improvements. Nothing groundbreaking this week, just a slow grind of useful work towards a solid release!"

<https://pointieststick.com/2024/05/03/this-week-in-kde-looking-towards-plasma-6-1/>

The TSAC audio codec:

04/05/2024

Fabrice Bellard, who founded the QEMU, FFmpeg, BPG, QuickJS, TinyGL and TinyCC projects, published the TSAC audio encoding format and associated tools for compressing and decompressing audio files. The format is focused on transmitting data at very low bitrates, for example, 5.5 kb/s for mono and 7.5 kb/s for stereo, while maintaining acceptable quality of music and speech. Using TSAC allows you to pack a musical composition with a duration of 3.5 minutes and a sampling frequency of 44.1 kHz (stereo) into a 192 KB file, which will be almost indistinguishable from the original to the ear of an inexperienced layman. It is stated that the project's code is distributed under the MIT license, but the source code is not currently offered for download.

The basis for the creation of TSAC was the Descript audio codec, which was expanded to support stereo sound and transferred to the use of another machine learning model based on a neural network with a “ transformer ” architecture, which

made it possible to increase the compression ratio by reconstructing lost details taking into account the model of human auditory perception. The model occupies about 200 MB in compressed form and is formatted in a deterministic representation, which guarantees the same result regardless of the CPU/GPU used and the number of threads involved in the calculations

<https://bellard.org/tsac/readme.txt>

Dillo 3.1 has been published:

05/05/2024

The release of the minimalistic web browser Dillo 3.1 , written in C/C++ using the FLTK library, has been published. The browser is characterized by its small size (the executable file is about a megabyte when assembled statically) and minimal memory consumption, with a graphical interface with support for tabs and bookmarks, support for HTTPS and a basic set of web standards (there is support for HTML 4.01 and CSS, but no JavaScript). Dillo's functionality can be extended through plugins, for example there are plugins for the IPFS and Gemini protocols. The project code is distributed under the GPLv3 license.

The last major release of Dillo 3.0.0 was published in 2011, and the last corrective update 3.0.5 in 2015. In 2016, one of the key developers of the project died, then in 2017 the development of Dillo completely stopped, and in 2022 the payment period for the project domain expired and the site dillo.org ceased to exist. In January 2024, an attempt was made to revive the project, the results of which are presented as part of Dillo 3.1. A fork of Dillo+ (Dillo-Plus) was also created in 2023 , which included the backlog of fixes (the last change to Dillo-Plus was added two months ago).

<https://dillo-browser.github.io/latest.html>

Week 19

Release of GIMP 2.10.38:

06/05/2024

The graphics editor GIMP 2.10.38, has a new version. Packages for installation have been published in flatpak format (a package in snap format will also be prepared in the near future). The release includes bug fixes and minor improvements. It is noted that the transfer of new features to the 2.10 branch has been stopped, and all efforts to increase functionality are focused on preparing the GIMP 3 branch, which is frozen before release and at the final stage of preparing a release candidate. It is likely that GIMP 2.10.38 will be the last release in the 2.10 branch, but it is possible that after the release of GIMP 3.0.0 another release of GIMP 2.10.40 will see the light of day, containing only bug fixes.

<https://www.gimp.org/news/2024/05/05/gimp-2-10-38-released/>

Release of PeerTube 6.1:

06/05/2024

A new release of a decentralized platform for video hosting and video broadcasting PeerTube 6.1 is out. PeerTube offers a vendor-neutral alternative to YouTube, Dailymotion and Vimeo, using a content distribution network based on P2P communications and linking visitors' browsers together. The project's code is distributed under the AGPLv3 license.

<https://joinpeertube.org/news/release-6.1>

The GNOME Project has published its financial report for 2023:

08/05/2024

The GNOME Foundation has published its financial report for fiscal year, 2023. It covers figures from October 2022 to September 2023. The report also mentions the main events of this period (releases GNOME 44 and 45 , the appointment of a new director) and developer conferences held (GUADEC 2023 in Riga, GNOME Asia 2022 in Kuala Lumpur, Linux App Summit in Brno).

As for financial indicators, expenses for the reporting period significantly exceeded the receipt of funds - \$556 thousand were received, *676thousandwerespent*(120 thousand from previous savings). It is worth noting that overspending was also observed in previous periods: in 2022, the project received \$363 thousand and spent \$649 thousand (overspend of \$286 thousand), in 2021 the project received \$287 thousand and spent \$927 thousand (overspend of \$640 thousand), in In 2020, the project received \$925 thousand and spent \$789 thousand (balance \$136 thousand), in 2019 the project received \$915 thousand and spent \$608 thousand (balance \$307 thousand), in 2018 the project received \$1.073 million and spent \$365 thousand (balance \$708 thousand). In November 2023, the project also received a million euros from a Sovereign fund.

As for the sources of funds in 2023, of the \$556 thousand received, \$422 thousand are related to donations and sponsorships, \$47 thousand are earned through conferences, \$80 thousand are related to the GIMP project. Expenditures include \$283,000 for conferences, \$105,000 for support and infrastructure, \$96,000 for Outreach, \$30,000 for GIMP, \$121,000 for administrative expenses, and \$39,000 for other projects.

<https://foundation.gnome.org/2024/05/07/2023-annual-report/>

Release of pacstall 5.0:

08/05/2024

A new release of the package manager pacstall 5.0 is available, that develops an analogue of the AUR concept for Ubuntu Linux and its own repository, which contains 518 packages that

allow you to install the latest versions of programs of interest in the current Ubuntu environment, in parallel with the programs available in the system. Packages are in pacscript format, similar to PKGBUILD in the AUR and also include download, dependency, build, and installation information. The utility code is written in the Shell and distributed under the GPLv3 license.

<https://github.com/pacstall/pacstall/releases>

Release of Nebula 1.9:

09/05/2024

A new release of the Nebula project has been published, offering tools for building secure overlay networks that allow you to combine geographically separated hosts into a separate isolated network on the internet. The project is designed to create your own overlay networks for any need, for example, to combine corporate computers in different offices, servers in different data centers or virtual environments from different cloud providers. The code is written in Go and distributed under the MIT license. The project was founded by Slack, which develops a corporate messenger of the same name. Supports Linux, FreeBSD, macOS, Windows, iOS and Android.

Nodes in the Nebula network communicate directly with each other in P2P mode - direct VPN connections are dynamically created as data needs to be transferred between nodes. The identity of each host on the network is confirmed by a digital certificate, and connecting to the network requires authentication - each user receives a certificate confirming the IP address in the Nebula network, name and membership in host groups. Certificates are signed by an internal certification center, deployed by the creator of each individual network at its own facilities and used to certify the authority of hosts that have the right to connect to a specific overlay network tied to that certification center.

<https://github.com/slackhq/nebula/releases/tag/v1.9.0>

Daphile 24.05:

09/05/2024

The Daphile 24.05 distribution was released, It based on Gentoo Linux and designed to create a system for storing and playing a music collection that can be replaced on a computer without a screen. (headless) Playback and collection management is done through a specially created web interface. A build with a regular Linux kernel (329 MB) and a build with real-time components (319 MB) are available for download.

The distribution can operate as a sound server, network storage (NAS, Network-Attached Storage) and wireless access point. Playback from internal drives, network streaming services and external USB drives is supported. To ensure maximum sound quality and create multi-zone audio systems, you can connect your Daphile computer to analog amplifiers via digital-to-analog converters with a USB interface.

<https://www.daphile.com/>

Release of Xpra 6.0:

10/05/2024

A new release of the Xpra project has been published. it is developing a similar app to screen and tmux utilities for working with graphical applications. Xpra allows you to run X11 applications on a local or remote system, disconnect a session without terminating programs, and return to working with applications after some time or continue working from another host (you can start working with a program on one machine and continue on another). For example, Xpra allows you to run a graphical application on an external Linux server and display the content on the screen of the current workstation running Linux, Windows or macOS. The project code is written in Python and is distributed under the GPLv2+ license.

You can both connect to existing desktop sessions and create

new sessions with graphical Linux programs in Windows and macOS environments. Moreover, Xpra has a built-in HTML5 client that allows you to connect to sessions through a browser. In addition to access to windows, Xpra supports many related desktop features, such as broadcasting sound to a remote system, forwarding printers and web cameras , access to the clipboard, supporting synchronization of the system tray state and notifications . There are built-in functions for transferring and synchronizing files between systems.

<https://github.com/Xpra-org/xpra/releases/tag/v6.0>

The gittuf project is at 0.4:

10/05/2024

A new release of the gittuf 0.4 project is available, that develops a hierarchical system for verifying the contents of Git repositories, allowing to minimize the risks in a situation of compromise of individual developers with access to the repository. Gittuf provides an additional layer of security to Git and a set of utilities for managing the keys of all developers who have access to the repository, and setting rules for accessing branches, tags and individual files. The project code is written in Go and distributed under the Apache 2.0 license. The project is at the stage of active development and has an alpha release quality, suitable for experimentation, but not yet ready for production implementation.

The gittuf verification model is based on a hierarchical trust propagation system. The root of trust belongs to the owner of the repository, who can generate keys for development participants and define the rules to govern the generated keys. Gittuf allows you to create flexible granular rules that define the permissions of each developer and the area of the repository in which they can make changes. For example, a developer may be authorized to create tags, make changes to specific branches, or change only individual files in the repository.

<https://github.com/gittuf/gittuf/releases/tag/v0.4.0>

Release of EuroLinux 9.4:

11/05/2024

A new release of EuroLinux took place, prepared by rebuilding the source code of the packages of the Red Hat Enterprise Linux 9.4, completely binary compatible with it. The changes boil down to rebranding and removal of RHEL-specific packages; otherwise, the distribution is completely similar to RHEL 9.4. The EuroLinux 9 branch will be supported until June 30, 2032. Installation images of 10 GB (appstream) and 2 GB in size have been prepared for download. The project provides scripts for migrating existing installations based on RHEL 7/8/9, AlmaLinux 8/9, CentOS 7/8, Oracle Linux 7/8/9, Rocky Linux 8/9 and CentOS 9 Stream to EuroLinux 9.4.

EuroLinux builds are distributed either through a paid subscription or free of charge. Both options are identical, are built simultaneously, they include a full set of system capabilities and allow you to receive updates. The differences between a free and paid subscription include technical support services, access to errata files, and the ability to use additional packages that include tools for load balancing, high availability, and reliable storage.

<https://docs.euro-linux.com/release-notes/9.4/>

Release of VCMi 1.5.0:

12/05/2024

The VCMi 1.5 project is now available , developing an open game engine compatible with the data format used in the Heroes of Might and Magic III games. An important goal of the project is also to support mods, to add new cities, heroes, monsters, artifacts and spells to the game. The source code is distributed under the GPLv2 license. It supports Linux, Windows, macOS and Android.

The new version is notable for the significant improvement in online multiplayer support and the addition of a new interface

for setting up multiplayer gaming sessions. Add to that, the generation of more realistic-looking random maps, improved performance of the AI engine. They added initial support for game controllers. The ability to customize keyboard shortcuts is also provided.

<https://vcmi.eu/blog/2024/05/10/vcmi-150-released/>

Release of Pingora 0.2:

12/05/2024

Cloudflare has published the second release of the Pingora framework, designed for developing secure, high-performance network services in Rust. A proxy, built using Pingora, has been used in the Cloudflare content delivery network instead of nginx for about a year and processes more than 40 million requests per second. The code is written in Rust and published under the Apache 2.0 license.

<https://github.com/cloudflare/pingora/releases>

Week 20

Linux kernel 6.9 release:

13/05/2024

After two months of development, Linus Torvalds presents the release of the Linux kernel 6.9. Among the most notable changes: the dm-vdo module for deduplication and compression of block devices, direct file access mode in FUSE, support for creating pidfds for individual threads, a BPF token mechanism, support for Rust on ARM64 systems, deprecation of the Ext2 FS driver, removal of the old NTFS driver, support for the Intel FRED mechanism.

The new version includes 15,680 fixes from 2,106 developers, the patch size is 54 MB (the changes affected 11,825 files, 687,954 lines of code were added, 225,344 lines were deleted). The last release had 15641 fixes from 2018 developers, the patch size was 44 MB. About 42% of all changes introduced in 6.9 are related to device drivers, approximately 17% of changes are related to updating code specific to hardware architectures, 13% are related to the network stack, 7% are related to file systems, and 4% are related to internal kernel subsystems.

<https://lkml.org/lkml/2024/5/12/224>

Viola Workstation K 10.3:

13/05/2024

An update is available for the Linux distribution "Viola Workstation K 10.3", which offers a KDE desktop environment and is designed for a wide range of users in the office and at home. The distribution can also be part of the Active Directory infrastructure (domain authentication, access to file resources and print resources are available). The build is prepared for x86_64 architecture and built on the ALT 10 platform. There is a live image available.

Only individuals, including individual entrepreneurs, can freely use the downloaded version. Commercial and government organizations can download and test the distribution, but for work in the corporate infrastructure, legal entities must purchase licenses or enter into written licensing agreements.

<https://lists.altlinux.org/pipermail/altlinux-announce-ru/2024/000045.html>

Debian switches to a stripped-down version of the KeePassXC:

13/05/2024

The maintainer who builds KeePassXC password manager packages for Debian has switched to delivering the most stripped-down version of the program, which retains only the basic functionality necessary for securely storing passwords on the local system. Advanced features, including networking capability, IPC management code, web browser integration components, auto-password functionality, and code to support Yubikey keys, have been removed from the standard keepassxc package to eliminate unnecessary functionality that increases attack surface and has the potential to negatively impact security and privacy.

<https://fosstodon.org/@keepassxc/112417353193348720>

Rescuezilla 2.5:

13/05/2024

A new release of the Rescuezilla 2.5 distribution is available, designed for backup, system recovery after failures and diagnosis of various hardware problems. The distribution is built on Ubuntu and continues the development of the "Redo Backup & Rescue" project, where development was discontinued in 2012. Live builds for 64-bit x86 systems (1.2 GB) and a deb package for installation on Ubuntu are offered for download .

Rescuezilla supports backup and recovery of accidentally deleted files on Linux, macOS and Windows partitions. Automatically searches for and connects network partitions that can be used to host backups. The graphical interface is based on the LXDE shell. The format of the created backups is fully compatible with the Clonezilla distribution. Recovery is supported with Clonezilla, Redo Rescue, Foxclone and FSArchiver images, as well as virtual machine images in VirtualBox VDI, VMWare VMDK, QEMU QCOW2, Hyper-V VHDx and .dd/.img formats.

<https://github.com/rescuezilla/rescuezilla/releases/tag/2.5>

An NVIDIA representative answered questions related to the transfer of drivers to open kernel modules:

14/05/2024

Andy Ritger, who leads NVIDIA's Unix-like operating system driver development, answered questions raised regarding the transition of NVIDIA's proprietary drivers to use open Linux kernel modules by default on systems with GPU-based microarchitectures starting with Turing.

When asked about achieving parity in the functionality of open and proprietary drivers, an NVIDIA representative replied that in driver release 560, open source kernel modules will roughly match the functionality of proprietary modules. Among the limitations, one can use the RTD3 dynamic power management mechanism (Run Time D3) with open kernel modules on older generations of GPUs preceding Ampere (proprietary modules additionally support GPUs on the Turing microarchitecture).

The capabilities of open and proprietary modules related to GPU initialization and power management will be quite similar in the NVIDIA 560 drivers, and over time, work will continue to achieve full parity in this direction. Release 560 will also address some long-standing issues in open modules, such as those related to the use of VRR (Variable Refresh Rate) on laptops. NVIDIA has no plans to push for open modules to be included in the main Linux kernel.

When asked about support for open Nouveau and NVK drivers , an NVIDIA representative replied that for production applications the company recommends using proprietary drivers and separately supplied open kernel modules. The company has previously made attempts to provide nouveau and nvk developers with documentation for NVIDIA chips and hardware interfaces and provided individual patches, but the assistance provided is modest enough to be called support.

When asked about the possibility of support in the open Nouveau driver for proprietary NVIDIA components running in user space, such as CUDA, AI, RT/PT, DLSS and Optix, it was indicated that this is not yet possible and these components cannot work when using the nouveau kernel module. Whether this will be possible in the future is not yet clear.

It is noted that with nouveau it is also not yet possible to use features related to configuration and monitoring (nvapi/nvidia-smi). At the same time, a previous license change for nvapi API definitions allowed the wine and proton projects to prepare their own implementations of some nvapi elements used in games. When asked about the participation of NVIDIA employees in the development of nouveau, it is indicated that such participation is still insignificant, but some employees are already contributing to the development of Nouveau and participating in discussions.

NVIDIA is not going to provide open kernel modules for older GPUs before the Turing generation. Users of Volta and older GPUs should continue to use the proprietary modules.

When asked about the company's plans to open up components of the driver stack for GPUs running in user space, an NVIDIA employee who answered the question said he had not heard of such plans.

The decision to use public modules by default is driven by the desire to simplify testing and reduce the overhead of having to retest public and private modules.

<https://forums.developer.nvidia.com/t/clarifying-560-series->

Release of Manjaro Linux 24.0:

14/05/2024

A new release of the Manjaro Linux 24.0 distribution, built on Arch Linux and aimed at novice users, is out. The distribution is notable for its simplified and user-friendly installation process, support for automatic hardware detection and installation of the drivers necessary for its operation. Manjaro comes in the form of live builds with the KDE (3.7 GB), GNOME (3.5 GB) and Xfce (3.5 GB) graphical environments built for the x86_64 architecture and various boards based on ARM processors. With the participation of the community, builds with Budgie, Cinnamon, Deepin, LXQt and i3 are further developed .

To manage repositories, Manjaro uses its own BoxIt toolkit, designed similar to Git. The repository is maintained on a rolling basis, but new versions undergo an additional stage of stabilization. In addition to its own repository, there is support for using the AUR (Arch User Repository) repository. The distribution kit is equipped with a graphical installer and a graphical interface for configuring the system.

<https://forum.manjaro.org/t/manjaro-24-0-wynsdey-released/161527>

ALDOS a variant of Fedora without systemd:

15/05/2024

ALDOS 1.4.18 is presented, offering a classic layout user environment, designed for minimal resource consumption and capable of running on low-power systems. The distribution is based on Fedora Linux technologies, but comes without the systemd system manager, instead they use Upstart to initialize and start services, Eudev is used for devices, and elogind is used to manage sessions. The installation image size is 1.9 GB.

The current branch of the ALDOS 1.4 distribution will be supported until the end of September 2029.

Features of ALDOS include: the use of the oldest supported branch of the Linux kernel - 4.19, which is chosen as the least bloated and undemanding of resources, also stands out. Linux kernel 5.4 is available for installation on newer hardware. SELinux is disabled by default. The graphical environment is based on Xfce 4.18, but if desired, you can install MATE, KDE Plasma, LXQt and Lumina Desktop from the repositories. A full set of multimedia codecs is available out of the box, and the repository contains more than 35 thousand packages. By default, localizations are offered for Spanish, Catalan and English (support for other languages can be installed from the repository).

https://www.reddit.com/r/linux/comments/1cs8xr7/aldos_fedora_without_systemd/

Release of Endless OS 6.0:

15/05/2024

A new release of Endless OS 6.0 is out, aimed at creating an easy-to-use system in which you can quickly select applications to suit your taste. Applications are distributed as self-contained packages in Flatpak format. Suggested boot images range in size from 1.2 to 23 GB!!

The distribution does not use traditional package managers, instead offering a minimal, atomically updated read-only base system built using the OSTree toolkit (the system image is atomically updated from a Git-like repository). Fedora developers are trying to repeat ideas identical to Endless OS as part of the Silverblue project to create an atomically updated version of Fedora Workstation, as well as the creators of Vanilla OS , CarbonOS , tau-OS and Pop!_OS . The Endless OS installer and update system is used by the GNOME OS project .

Endless OS is one of the distributions that promotes innovation among user Linux systems. The desktop environment in Endless

OS is based on a significantly redesigned fork of GNOME. At the same time, Endless developers actively participate in the development of upstream projects. For example, in the GTK+ 3.22 release, about 9.8% of all changes were prepared by Endless developers, and the company overseeing the project, Endless Mobile, is on the oversight board of the GNOME Foundation, along with FSF, Debian, Google, Linux Foundation, Red Hat and SUSE.

<https://www.endlessos.org/post/getting-started-with-endless-os-6>

Release of Oracle Linux 9.4:

15/05/2024

Oracle has published the release of the Oracle Linux 9.4 distribution, created based on the Red Hat Enterprise Linux 9.4 and fully binary compatible with it. Installation iso images of 10 GB and 900 MB in size, prepared for x86_64 and ARM64 (aarch64) architectures, are offered for download. Oracle Linux 9 has unlimited and free access to the yum repository with binary package updates that fix errors (errata) and security issues. Separately supported repositories with sets of Application Stream and CodeReady Builder packages have also been prepared for download.

In addition to the kernel package from RHEL (based on kernel 5.14), Oracle Linux offers its own kernel, Unbreakable Enterprise Kernel 7 Update 2, based on the Linux kernel 5.15 and optimized for working with industrial software and Oracle hardware. The kernel sources, including the breakdown into individual patches, are available in the public Oracle Git repository . The Unbreakable Enterprise Kernel is installed by default, positioned as an alternative to the standard RHEL kernel package and provides a number of advanced features such as DTrace integration and improved Btrfs support. Apart from the additional kernel, the releases of Oracle Linux 9.4 and RHEL 9.4 are completely identical in functionality (the list of changes can be found in the announcement of RHEL 9.4).

<https://blogs.oracle.com/linux/post/oracle-linux-9-update-4-is->

generally-available

GNOME OS switches to atomic updates using systemd-sysupdate:

15/05/2024

The developers of GNOME OS, an experimental distribution for GNOME developers and testers to evaluate the state of development of the desktop environment, (to get acquainted with emerging new features and test the performance of their applications in GNOME branches in development), announced the transition to the use of the systemd-sysupdate component for organizing atomic updates systems. The purpose of the change is the desire to adapt the nightly builds of GNOME OS to conduct daily quality control of GNOME development.

One of the advantages of switching GNOME OS from OSTree to systemd-sysupdate is the ability to use a verified boot process, in which a chain of trust extends from the bootloader to the system components of the distribution. In addition, using systemd-sysupdate will allow for more complete integration with systemd and enable an architecture that manipulates pre-built system images as indivisible components.

<https://www.codethink.co.uk/articles/2024/GNOME-OS-systemd-sysupdate/>

An SSH backdoor installed during the kernel.org hack remained undetected for two years:

16/05/2024

Researchers from ESET have published a 43-page report analyzing the Ebury rootkit and related activity. It is claimed that Ebury has been in use since 2009 and has since been installed on more than 400 thousand servers running Linux and several hundred systems based on FreeBSD, OpenBSD and Solaris. Around 110 thousand servers remained affected by Ebury at the end of 2023. The study is of particular interest given that Ebury was involved in the attack on kernel.org,

which reveals some new details about the compromise of the Linux kernel development infrastructure identified in 2011. Ebury was also detected on domain registrar servers, crypto exchanges, Tor exit nodes, and several unnamed hosting providers.

<https://www.welivesecurity.com/en/eset-research/ebury-alive-unseen-400k-linux-servers-compromised-cryptotheft-financial-gain/>

Opening of Winamp code announced:

17/05/2024

Llama Group has announced its decision to open source the Winamp media player and move the project to a collaborative development model in which anyone can take part in development. Publication of the code is scheduled for September 24, 2024. According to unofficial information, the transition to an open development model was caused by a reorganization due to financial problems, last year the company was forced to sell the Shoutcast project and fire the core team of developers who maintained the classic Windows application Winamp, in favor of developing the streaming web service of the same name and mobile applications.

The Winamp project was created by Justin Frankel and Dmitry Boldyrev in 1997 and is one of the longest-living multimedia players that continues to actively develop. Winamp is initially designed for use on the Windows platform and has about 83 million users. In April, mobile versions of Winamp were introduced for Android and iOS platforms. Due to its originality and flexibility in the field of changing the interface design through skins, several open clones for Linux were created under the influence of Winamp, such as XMMS , XMMS2 , Beep Media Player, Audacious and Qmmp .

<https://about.winamp.com/press/article/winamp-open-source-code>

Release of Neovim 0.10:

17/05/2024

Neovim 0.10 has been released, a fork of the Vim editor focused on increasing extensibility and flexibility. The project has been overhauling the Vim code base for over 10 years, resulting in changes that make code easier to maintain, provide a means of dividing labor between multiple maintainers, separate the interface from the core (the interface can be changed without touching the internals), and implement a new extensible architecture based on plugins. The original code of the project is distributed under the Apache 2.0 license, and the basic part is distributed under the Vim license. Ready-made builds are prepared for Linux (appimage), Windows and macOS.

One of the problems with Vim that prompted the creation of Neovim was its bloated, monolithic code base, consisting of more than 300 thousand lines of C (C89) code. Only a few people understand all the nuances of the Vim codebase, and all changes are controlled by one maintainer, which makes it difficult to maintain and improve the editor. Instead of the code built into the Vim core to support the GUI, Neovim proposes using a universal layer that allows you to create interfaces using various toolkits.

<https://gpanders.com/blog/whats-new-in-neovim-0.10/>

Release 7-Zip 24.05:

18/05/2024

Igor Pavlov announced a major version of the 7-Zip archiver 24.05. The project code is written in C++ and is distributed under the LGPL license. Ready-made builds for Windows and Linux are available for download for i686, x86-64 and ARM 32/64 architectures. Unfortunately, most distributions still ship with outdated p7zip, which is more than 7 years old. Probably because the 7z code depends on the ASMC project, which is not used anywhere else.

<https://sourceforge.net/p/sevenzzip/discussion/45797/thread/b92679e642/>

Changes to improve the display of KDE applications in GNOME and Xfce:

18/05/2024

Nate Graham, QA developer for the KDE project, has published another report on KDE development. The most notable change is an initiative to address icon issues when running KDE Gear-included applications in non-KDE environments such as GNOME and Xfce. The problem is that when creating the interface of KDE applications, icons from the general Breeze theme are used. When running in KDE, the state of the icon theme and applications are synchronized, but in third-party environments the Breeze theme may be missing or diverge from the reference version, resulting in dialogs and widgets showing empty spaces, placeholders, or icons that are not what the application authors intended.

As a solution to this problem, for KDE applications intended for use outside the KDE Plasma environment, functionality has been prepared for embedding the Breeze reference style and icons, which will be enabled by default, but can be overridden by the system or user. Projects like Kate, Konsole and Dolphin are already planning to use this new feature. It is noteworthy that the discussion of a symmetric solution to problems encountered when running GNOME applications in KDE is being carried out by the GNOME developers.

<https://pointieststick.com/2024/05/17/this-week-in-kde-all-about-those-apps>

The openSUSE project has published the Agama 8 installer, freed from binding to Cockpit:

18/05/2024

The developers of the openSUSE project have published the release of the Agama 8 installer (formerly D-Installer), which is being developed to replace the classic SUSE and openSUSE installation interface, and is notable for separating the user

interface from the YaST internals. Agama provides the ability to use various frontends, for example, a frontend for managing the installation via a web interface. To test the new installer, live builds have been created for the x86_64, ppc64le, s390x and ARM64 architectures, supporting the installation of openSUSE Leap, the continuously updated openSUSE Tumbleweed build, as well as several editions of SUSE ALP based on isolated containers.

The new installer provides the capabilities necessary to solve tasks, such as choosing an initial set of applications, setting up a network connection, language, keyboard, time zone and localization settings, preparing a storage device and partitioning, and adding users to the system. The main goals of Agama's development include; eliminating existing limitations of the graphical interface, expanding the ability to use YaST functionality in other applications, moving away from being tied to a single programming language, and encouraging the creation of alternative settings by members of the community.

<https://yast.opensuse.org/blog/2024-05-17/agama-8>

Week 21

Release of MX Linux 23.3:

20/05/2024

A new release of the lightweight distribution MX Linux 23.3 has been published, created by the joint communities formed around the antiX and MEPIS projects. The release is based on Debian with improvements from the antiX project and packages from its own repository. The distribution uses the sysVinit initialization system and its own tools for configuring and deploying the system. There are 32- and 64-bit builds (x86_64 , i386) with the Xfce desktop (2.1 GB), as well as 64-bit builds with the KDE desktop (2.6 GB) and builds (1.7 GB) with the Fluxbox window manager available for download.

<https://mxlinux.org/blog/mx-23-3-libretto-released/>

Ubuntu 24.04 builds for the Nintendo Switch:

20/05/2024

The Switchroot project has announced that a build of Ubuntu 24.04 is ready for download on Nintendo Switch game consoles based on the Tegra X1 SoC (Switch 2017, Switch 2019, Switch Lite and Switch OLED). In addition to Ubuntu, the Switchroot project also provides builds of Fedora 39, Lakka 5.0 and LineageOS 18.1 for download on the Nintendo Switch. Booting is done from an SD card using the hekate bootloader (RCM is used to bypass the blocking). Additional components developed by the project are distributed under the Apache 2.0 license.

Currently only KDE Plasma and Unity are supported (builds with GNOME are delayed due to problems with touch screens and full-screen output performance when using X11 on ARM64 systems).

Supported features include pairing with Nintendo Switch Pro, GameCube, Dualshock 4, X-Box One and Joy-Con controllers, overclocking the CPU, GPU and memory, support for USB-C, Wi-Fi, Bluetooth, DisplayPort/HDMI, light sensor , sound, Touchscreen, eMMC/SD, drivers for Tegra GPU with support for Vulkan, OpenGL, OpenGLES, EGL and CUDA, hardware acceleration of video decoding (in SMPV Player, ffmpeg, mpv and chromium-browser), deep sleep mode. NFC and infrared (IR) are not supported.

https://twitter.com/switchroot_org/status/1785702619509346306

IceWM 3.5.0 released:

20/05/2024

The lightweight window manager IceWM 3.5.0 is out. IceWM provides full control through keyboard shortcuts, the ability to use virtual desktops, the taskbar and application menus and you can use tabs to group windows. The window manager is configured through a fairly simple configuration file and themes can be used. One can combine windows in the form of tabs. Built-in applets are available for monitoring CPU, memory, and traffic. The code is written in C++ and distributed under the GPLv2 license.

<https://github.com/ice-wm/icewm/releases/tag/3.5.0>

Release of free 2D CAD software CadZinho 0.6:

21/05/2024

The minimalistic CAD program, CadZinho 0.6.0 has been released, providing tools for creating simple 2D technical drawings. The new version implements a new rendering architecture, which makes it possible to get rid of interface freezes during operation. The code is written in C with additions in Lua and is distributed under the MIT license. The output is generated using the SDL 2.0 library and the OpenGL 3.2 API. Builds are prepared for Linux, Windows and macOS.

The program supports drawing primitives such as lines, polygonal meshes, circles, arcs, ellipses, text, hatching, splines, images, points, labels, attributes and polylines. Layers and blocks are supported, as well as working with files in DXF and SVG formats. The result can be exported to G-code, HPGL, PDF, SVG, PS or image formats. A scripting language is provided for developing macros, extensions and customizing the interface. The ZeroBrane Studio development environment (Lua IDE) can be used, to develop extensions.

<https://github.com/zecruel/CadZinho/releases/tag/0.6.0>

Release of Geary 46.0:

21/05/2024

The Geary 46.0 email client, slated for use in GNOME, has been published. The project was originally founded by the Yorba Foundation, which created the popular photo manager Shotwell, but later development was taken over by the GNOME community. The code is written in Vala and is licensed under the LGPL. Builds will soon be prepared in the form of a flatpak package.

The goal of the project development is to create a product rich in capabilities, but at the same time extremely easy to use and consuming a minimum of resources. The email client is designed both for stand-alone use and to work in conjunction with web-based email services such as Gmail and Yahoo! Mail. The interface is implemented using the GTK3+ library. An SQLite database is used to store the message database, and a full-text index is created to search the message database. To work with IMAP, a GObject-based library is used that works in asynchronous mode.

The new version simplifies notification messages, solves problems with navigation, ensures that messages continue to be delivered after errors during data transfer, adjusts the correct counting of unread messages, updates translations, and makes minor improvements to the interface.

<https://gitlab.gnome.org/GNOME/geary/-/tags/46.0>

GhostBSD 24.04.1:

21/05/2024

A new release of the desktop-oriented distribution GhostBSD 24.04.1, built on FreeBSD 14-STABLE and offering the MATE user environment, has been published. The community creates unofficial builds with Xfce. By default, GhostBSD uses the ZFS file system. Both work in Live mode and installation on a hard drive are supported (using its own ginstall installer, written in Python). Boot images are created for x86_64 architecture (2.6 GB).

https://www.ghostbsd.org/news/GhostBSD_24.04.1_Is_Now_Available

Release of Alpine Linux 3.20:

22/05/2024

The release of Alpine Linux 3.20 is available, a minimalistic distribution built on the Musl system library and a set of BusyBox utilities. The distribution has increased security requirements and is built with SSP (Stack Smashing Protection). OpenRC is used as the initialization system, and its own apk package manager is used to manage packages. Alpine is used to build official Docker container images and is used in the PostmarketOS project. Bootable iso images (x86_64, x86, armhf, aarch64, armv7, ppc64le, s390x) are prepared in six versions: standard (209 MB), network bootable (229 MB), extended (975 MB), for virtual machines (61 MB) and for the Xen hypervisor (956 MB).

<https://alpinelinux.org/posts/Alpine-3.20.0-released.html>

Qualcomm will provide support for Snapdragon X Elite chips in the Linux kernel:

23/05/2024

Qualcomm has announced that it is working to bring changes to the main Linux kernel to support the ARM SoC Snapdragon X Elite, which uses its own 12-core Qualcomm Oryon CPU and Qualcomm Adreno GPU. The chip is aimed at use in laptops and PCs, and is ahead of the Apple M3 and Intel Core Ultra 155H chips in many performance tests. The first devices based on Snapdragon X Elite are expected in the middle of the year and will come with Windows, bleh. The changes published by Qualcomm provide the ability to use Linux on these devices.

In addition to patches for the Linux kernel, together with Lenovo, Arm and Linaro, they are developing the DtbLoader driver for UEFI firmware based on the TianoCore EDK2 open platform, a Grub-based bootloader and scripts for creating your own Debian builds for some devices based on the Snapdragon X Elite SoC, as well as already produced SoCs. Among the already released laptops that support Linux booting are the Lenovo Yoga C630 (Snapdragon 850), Lenovo Flex 5G (Snapdragon 8cx Gen 1) and Lenovo ThinkPad X13s (Snapdragon 8cx Gen 3). The bootloader supports dual booting of Windows and Linux.

Plans for the next six months include adding support for hardware acceleration of video decoding to Firefox and Chrome, implementing camera support based on the libcamera-SoftISP stack, optimizing GPU and CPU performance, and optimizing tools for managing energy consumption. Also mentioned is the inclusion of firmware for the new SoC in the Linux firmware set and support for the use of Ubuntu and Debian installers on devices with Snapdragon X Elite.

<https://www.qualcomm.com/developer/blog/2024/05/upstreaming-linux-kernel-support-for-the-snapdragon-x-elite>

Release of KDE Gear 24.05:

23/05/2024

The May rollout update for KDE Gear 24.05 applications developed by the KDE project has been announced. This is the second major update to the suite of applications published as part of the KDE 6 branch and after the transition to using the

Qt 6 library. The suite contains releases of 250 programs, libraries and plugins. Information about the availability of Live builds with new application releases can be found on the page linked below. New versions of individual applications can be downloaded from the Flathub and SnapCraft directories .

<https://kde.org/announcements/gear/24.05.0/>

GCompris 4.1 update:

24/05/2024

GCompris 4.1, a free learning center for preschool and primary school children, is out. The package provides 190 mini-lessons and modules, offering from a simple graphics editor, puzzles and keyboard simulator to lessons in mathematics, geography and reading training. GCompris uses the Qt library and is developed by the KDE community. Ready-made builds are created for Linux , macOS , Windows , Raspberry Pi and Android. In the new version, work has been done to improve the graphics in various lessons.

<https://gcompris.net/news/2024-05-23-en.html>

SANE 1.3 published with support for new scanner models:

24/05/2024

A new release of the sane-backends 1.3.1 package has been published, which includes a set of drivers, the scanimage command line utility, the saned background process for organizing network scanning, and libraries with the SANE-API implementation. The project code is distributed under the GPLv2 license. The 1.3.0 release was missed due to problems in the build infrastructure.

The package supports 1804 (in the previous version 1747) scanner models, of which 825 (815) have full support for all functions, for 825 (780) the level of support is rated as good, for 130 (129) - acceptable, and for 24 (23) - minimal.

Additionally, for 499 (464) devices there is an incompletely tested driver implementation. Support for 478 (470) scanners remains unrealized.

<https://alioth-lists.debian.net/pipermail/sane-announce/2024/000047.html>

Initial prototype of the new installer for GNOME OS:

25/05/2024

With the transition of the GNOME OS distribution to use the systemd-sysupdate component to organize atomic system updates, the development of a new installer for GNOME OS began. The development is still at the initial prototype stage, which is based on the interface layouts published in April, prepared by the designers of the GNOME project. At the current stage of development, the main focus is still on the general architecture and determining the internal logic, for example, organizing navigation and setting the order of page display in preparation for installation. The installer code is developed in Rust and distributed under the GPLv3 license.

GNOME OS is an experimental distribution for GNOME developers and testers to evaluate the state of desktop environment development, explore new features as they emerge, and test their applications running on development branches of GNOME.

<https://thisweek.gnome.org/posts/2024/05/twig-149/>

Release of Red Hat Enterprise Linux 8.10:

25/05/2024

Following the release of Red Hat Enterprise Linux 9.4, an update to the previous branch of Red Hat Enterprise Linux 8.10 was published, which is supported in parallel with the RHEL 9.x branch and will be supported at least until 2029. Installation builds are prepared for x86_64, s390x (IBM System z), ppc64le and Aarch64 architectures, but are available for

download only to registered Red Hat Customer Portal users (CentOS Stream 9 iso images and free RHEL builds for developers can also be used).

RHEL 8.10 was the last release in the 8.x branch, formed at the full support stage, implying the inclusion of functional improvements. On May 31, 2024, the 8.x branch will be moved to the maintenance stage, where priorities will shift towards bug fixes and security, with minor improvements related to support for critical hardware systems.

<https://www.redhat.com/en/blog/optimize-application-life-cycles-red-hat-enterprise-linux-810>

The ravynOS project is developing an edition of FreeBSD aimed at compatibility with macOS:

27/05/2024

After two years of development, the ravynOS 0.5 project has been released, developing a FreeBSD-based operating system aimed at achieving compatibility with macOS applications and providing a macOS-style user shell. The project's code is distributed under the BSD license. The size of the boot iso image is 869 MB (x86_64).

The stated goals of the project are to achieve compatibility with macOS applications at the level of source code and executable files. In the first case, it is possible to recompile the code of macOS applications for execution in ravynOS, in the second - embedding changes into the kernel and toolkit to run Mach-O executable files compiled for x86-64 and arm64 architectures. Each home directory has a ~/Library subdirectory for applications that use Apple's Cocoa programming interface.

For compatibility with macOS, a partial implementation of the Cocoa and Objective-C runtime programming interface is provided (located in the /System/Library/Frameworks directory), as well as compilers and linkers modified to support them. In addition to the macOS compatibility layer, ravynOS

also offers the ability to run Linux applications, based on FreeBSD's Linux emulation infrastructure (Linuxulator).

The graphical environment is built on its own window server, using a stripped-down composite labwc server (support for server-side window decoration and themes has been removed), wlroots and the Wayland protocol. Graphical applications can use the Qt and Cocoa frameworks. The interface uses typical macOS concepts, such as a top bar with a global menu, an identical menu structure, keyboard shortcuts, a similar-style Filer file manager, and support for commands such as `launchctl` and `open`.

<https://github.com/ravynsoft/ravynos/releases/tag/v0.5.0>



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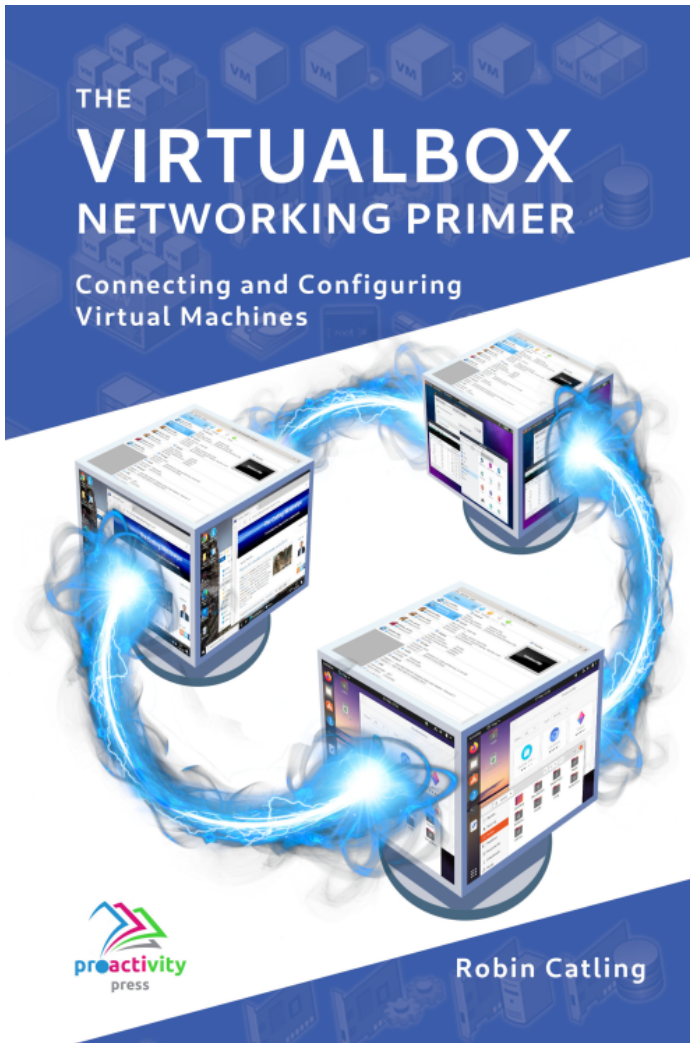
The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all. The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day. podcast.ubuntu-uk.org

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The VirtualBox Networking Primer

Connecting and Configuring Virtual Machines



The VirtualBox Networking Primer is a no-nonsense guide for

the VirtualBox user taking their next steps into virtual networks. While Oracle VM VirtualBox is a great free tool, the real power of virtualisation comes when you start connecting virtual machines to each other and to the wider world. Software development, sales, education and training are just some of the areas in which network access to virtual machines offers endless opportunities. But the world of computer networks is filled with complex technical jargon.

Complete with principles, practice, examples and glossary, The VirtualBox Networking Primer takes the frustration and confusion out of connecting real-world projects.

Author: **Robin Catling**

Publisher: Proactivity Press

ISBN13 : 9782006120082

Amazon US link:

[https://www.amazon.com/dp/2006120084?
ref_=pe_3052080_397514860](https://www.amazon.com/dp/2006120084?ref_=pe_3052080_397514860)

Amazon UK link:

[https://www.amazon.co.uk/VirtualBox-Networking-Primer-Connecting-Configuring/dp/2006120084/ref=sr_1_1?
dchild=1&keywords=virtualbox+networking
+primer&qid=1600253699&s=books&sr=1-1](https://www.amazon.co.uk/VirtualBox-Networking-Primer-Connecting-Configuring/dp/2006120084/ref=sr_1_1?dchild=1&keywords=virtualbox+networking+primer&qid=1600253699&s=books&sr=1-1)

Kobo:

<https://www.kobo.com/us/en/ebook/the-virtualbox-networking-primer>

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Command & Conquer: Password Hashing

Written by Erik

I recently enrolled in a short course on technical writing, and it got me thinking. Although our magazine is aimed at Ubuntu newbies, we have an established reader base that is not. So I am going to put it out there, would you guys prefer a more clinical approach to command & conquer, or should we continue with our casual conversation-like tone? Is it about the meat and potatoes – to get the job done, or do you prefer the scenic route. Would you like to know the why or just the how? Or would you prefer learning without knowing that you are? Would you prefer gamification?

Do let us know, so we can become more of what you want. Send us an e-mail on: misc@fullcirclemagazine.org

Now on to this month's command and conquer. I am again writing this in response to questions in some of our telegram channels.

Btanon: *What's the best way to hash passwords?*

Srace: *How can I delete my old passwords file so it can't be recovered?*

I'd like to start by addressing the second question first. Firstly, if you do keep bitcoin wallets and bank passwords on your computer, it should be in an encrypted folder, as when it comes to your finances, you want to be doubly sure.

Linux has a utility called “shred”, as in file shredder. To find out more you can type: `man shred`

```
SHRED(1)                                User Commands                                SHRED(1)

NAME
    shred - overwrite a file to hide its contents, and optionally delete it

SYNOPSIS
    shred [OPTION]... FILE...

DESCRIPTION
    Overwrite the specified FILE(s) repeatedly, in order to make it harder
    for even very expensive hardware probing to recover the data.

    If FILE is -, shred standard output.

    Mandatory arguments to long options are mandatory for short options
    too.

    -f, --force
        change permissions to allow writing if necessary

    -n, --iterations=N
        overwrite N times instead of the default (3)

Manual page shred(1) line 1 (press h for help or q to quit)
```

As it says, “overwrite a file to hide its contents, and optionally delete it”, do not assume anything. If we look at the arguments, a few stand out. The TL;DR version is that I remember it as USN, like the gym supplements, but the S is a Z.

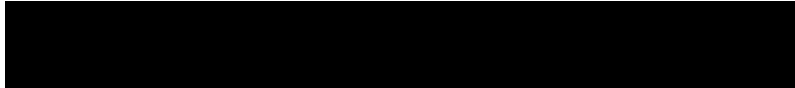
Let’s dissect that. The -u removes everything at the end, think of it as clean up. The -z writes a file with all zeroes over your file, like there was nothing there. The -n lets you specify the amount of times to overwrite.

Now let’s see it in action. Copy a FCM pdf file to a folder. Right-click inside said folder and click on “open terminal here”. Now type: `shred -u -z -n 6 issue201_en.pdf` (replace that file name with your file) and hit enter. Poof* it’s gone. The default amount of times a file is hammered is three times. I doubled it up by specifying six. If you followed along, congratulations, you securely deleted a file.

Now let’s explain hashing as this confuses people. Hashing is a one-way function. Say it out loud. It is meant to be one way only. This is very simplistic AND wrong, but it helps to paint a picture. One plus two hashes to three, if plus was the hash. You can immediately see the problem, two plus one is also three. This *can happen in a hash, but it is unlikely. My message was one plus two, not two plus one. This is very important in password hashing, as you can imagine! While we will not discuss hashing algorithms, as it would take up the whole year,

we can show you how to use them. We often see SHA256 sums in the same folder that you download a distro from. Think of this as a unique fingerprint; it is not, but think of it that way, as the chances of getting the same hash by changing something is like winning every lottery at once.

Let's see that in action. I suggest using a text file as we can change the contents easily. Please follow along if you are a newbie. Create a folder and an empty file inside it:



We now have a file with 11 bytes of data.

Name	Size	Type	Date Modified
fcm.txt	11 bytes	plain text document	Today

Now type:



```
ed ~ > test sha256sum fcm.txt 4795a1c2517089e4df569afd77c04e949139cf299c87f012b894fccf91df4594 fcm.txt
ed ~ > test
```

OK, the file is fingerprinted!

Now open the file in your text editor, and add a space after the zero and save it. Our file is still only 11 bytes in size. However, if we repeat the command above, we will get something completely different, due to a single space.

```
ed ~ > test sha256sum fcm.txt 4795a1c2517089e4df569afd77c04e949139cf299c87f012b894fccf91df4594 fcm.txt
ed ~ > test sha256sum fcm.txt ca2930391c9bd94f35418adca789611e941267a2be5e8d970d0f44b8bf27652b fcm.txt
ed ~ > test
```

And that is the short version. Both files contained only “1234567890” and you could not tell by typing the file out that anything had changed, but the hash does not lie. I dare you to keep adding spaces in different places, without changing the

file size and see if you can get a hash, even resembling the first one.

```
ed ~ > test cat fcm.xt
cat: fcm.xt: No such file or directory
ed ~ > test 1 cat fcm.txt the hash does not
1234567890
ed ~ > test
```

You can do this with md5sum also: md5sum fcm.txt

This creates a shorter fingerprint, if you need it for a file. Just please don't use it for passwords! To understand why, read up on rainbow tables: https://en.wikipedia.org/wiki/Rainbow_table

Homework: repeat the above exercise with md5sum

We used a text file in this issue, as it is easy to change something, but you can use this with other files too, like pictures, for instance.

When it comes to passwords, you'd need to hash them and salt them and probably hash the result as well. Just remember to keep the salt nowhere near the place you keep your hashes. The same goes for the passwords, it is best to discard them once you have the hash.

If anything was unclear, misc@fullcirclemagazine.org

Erik has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.

HowTo: Python in the REAL World - Part 151

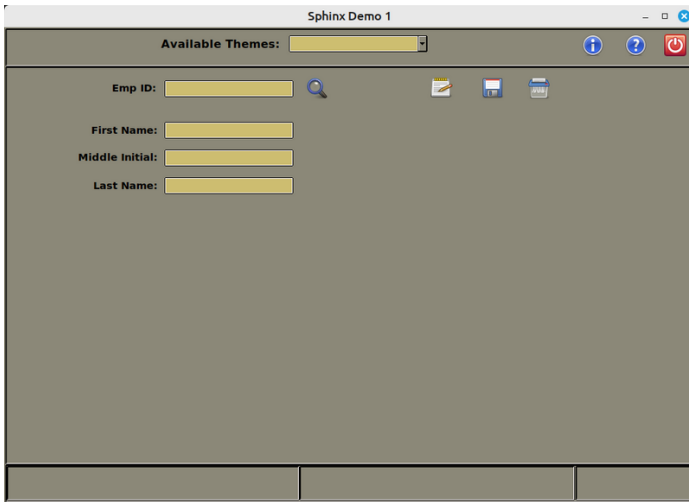
Written by Greg Walters

More Mysteries of the Sphinx

Greetings fellow Sentient Lifeforms. Beaming yet again from somewhere in time and space, I come again to, hopefully, provide more well needed information. (If you are not a Sentient Lifeform, I do not intend to withhold this from you, so feel free to attempt to read this.)

This month's article was inspired by one of the PAGE users on the PAGE Discord forum and someone whom I consider a good friend, Professor Roberto Machorro Mejía, who started using PAGE last school year. He teaches at UNAM, a public university, the largest in Mexico. He was using PAGE to create a GUI for a project he and his students were working on. Long story short, he has been reading Full Circle Magazine for a while now and he sent me a note that he really enjoyed my article on Sphinx in last month's issue. He was wondering, however, if Sphinx worked directly on a source file. So, I decided to write about how to make this happen.

I created a dummy program that really does nothing much but has functions that have Python Docstrings that can be used by Sphinx to “automatically document” the functions in the generated HTML or EPUB files.



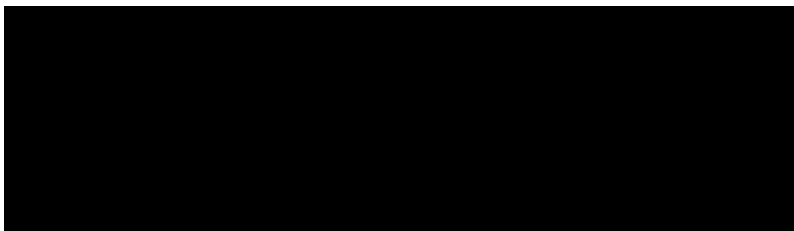
Creating the docstrings that are needed to do this is very simple, but you need to remember to use the docstrings in every function, no matter how simple. If you don't, you'll probably have to go back and update the source file.

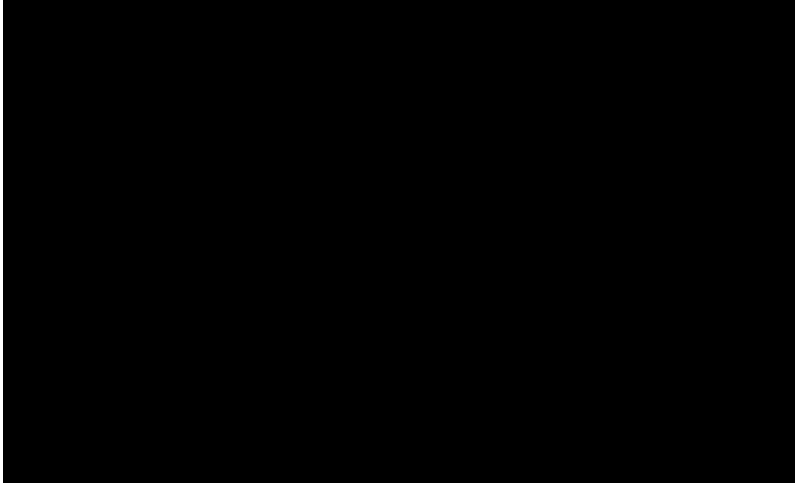
So, it all starts with your source code. If you use PAGE to create your GUI program, you don't need to do anything to the PAGE .tcl file or the Python GUI.py file. The only file you need to concern yourself with is the support.py file.

One other thing to note, I'm using the bizstyle theme for Sphinx. If you decide to use a different Sphinx theme, your document won't match the images that I've included here.

The docstring

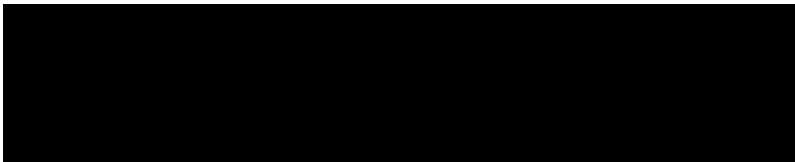
The docstring is simply a section of your source code that starts and ends with three double quotes and in between is pretty much free-form information. However, for Sphinx to grab the information, there needs to be a few special lines. Here is a snippet of what you can expect to provide...





Of course the first line is the function definition. Then we start the docstring with the three double quotes.

The next line is a description of what the function is for, which must be a single line. Then any parameters need to be documented using the format:



Then what the function returns:



If there is more than one parameter, simply repeat the param and type keys.

For more information on Docstrings, you can follow this link <https://peps.python.org/pep-0257/#abstract>

Doing it Manually

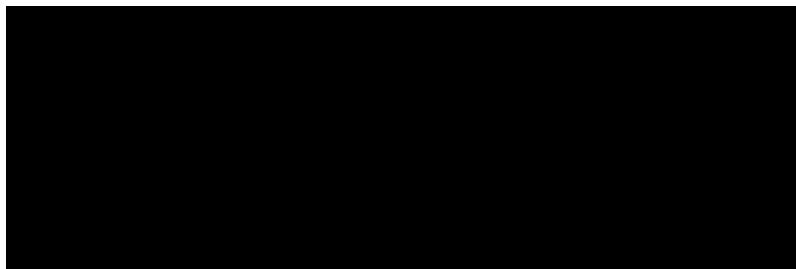
Of course you can do the documentation of your functions and methods manually. I'll create a "dummy" entry for a fictitious **Sphinx** document.

This is just the description that I would put into the fictitious index.rst file...

One of the best things about the program is for the user to have the ability to change themes at any time to any theme in the theme folder. Of course, these are all .tcl themes. Use the `load_tcl_themes` function to generate a list of all of the themes, then load this into a `TCombobox values` property. Then bind the virtual `<ComboboxSelected>` event to the `TCombobox` providing a callback function whenever the user selects something from the `TCombobox` list. Here is the code
`sphinxDemo1_support.on_ComboSelect()` function

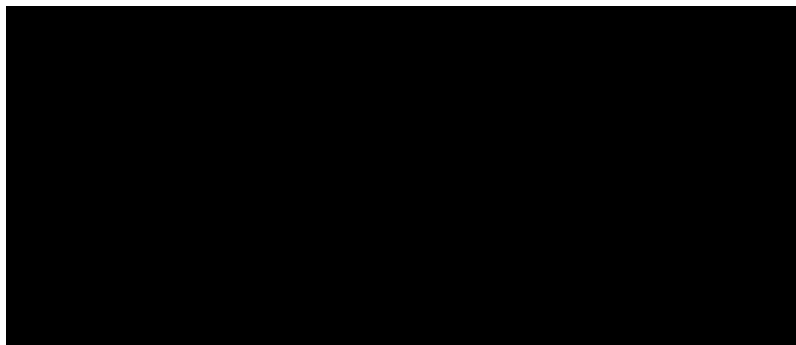
Now we describe the function using the `.. py:function::` directive.

You can see that this is very similar to the docstring information that I suggested you place into the source code, but manually entered into the index.rst Sphinx file.



Now we can include more descriptive text and/or a snippet of the function.

Here is the code that will actually switch the theme to the user selection...



Here is how it will look in your HTML file.

```
sphinxDemo1_support.on_ComboSelect(e)
```

Parameters:	e (<i>event</i>) – The virtual event ("<<ComboboxSelected>>")
Returns:	None

That's a lot of work to do, especially if the code has already been documented using docstrings.

Doing it Automatically

In order to take advantage of the automatic documentation abilities of Sphinx, you will need to do a little bit of preparation. You will need to modify the `conf.py` file and add at least one extra `.rst` file to the `/sphinx/docs/source` folder.

The changes need to go into the `conf.py` file. These lines need to go somewhere around line 16.

The most important line is the one that starts with `sys.path.append()`

This is the fully qualified path to your source code. You don't need to enter the filename(s) at this point, just the path.

The other important part is the extensions section. You will need to have all four lines in the list.

Now you just need to add one line to your `index.rst` file for each function you want Sphinx to document.



Of course, you can add text before or after this line, but here is what the output will look like. (I included the first line, just to make it flow better).

Here's information about the `sphinxDemo1_support.load_tcl_themes()` function:

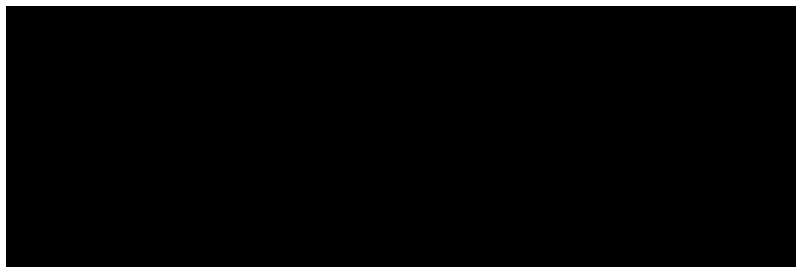
`sphinxDemo1_support.load_tcl_themes(folder, silent)`

This function will load all tcl theme files located in <folder>.

Parameters:	<code>folder (String)</code> – string containing the location of the theme folder. <code>silent (Boolean)</code> – True/False - False will print the names of the theme being worked on. True will suppress the print.
Returns:	none

Adding an Autosummary

You need to create an extra `.rst` file named something like “`api.rst`”. In it you place just a few lines...



The final addition to your `index.rst` file needs to tell Sphinx to include the `api.rst` file. This is actually just a single line in the `TableOfContentsTree` section (which is near the end, just before

the Indices and tables section).



Notice that the only line in bold is the one that adds the `api.rst` file, and this is the one you need to add. You don't have to include the `.rst` extension.

When you run your next build, you will see the addition to the bottom of the main page...

Contents:

- [API](#)
 - [sphinxDemo1_support](#)

Indices and tables

- [Index](#)
- [Module Index](#)
- [Search Page](#)



And when you click on the hyperlink in red, you will be directed to the api listing.

Functions

<code>load_tcl_themes(folder, silent)</code>	This function will load all tcl theme files located in <folder>.
<code>main(*args)</code>	Main entry point for the application.
<code>on_ComboSelect(e)</code>	When the user selects an item from the TCombobox, that item will be used to change the theme.
<code>on_btnAbout(*args)</code>	Callback that will display the 'about' information for the program.
<code>on_btnDelete(*args)</code>	Callback that will handle deleting records from the database.
<code>on_btnEdit(*args)</code>	Callback that will enable editing of database record.
<code>on_btnExit(*args)</code>	Callback that will end the program.
<code>on_btnFind(*args)</code>	Callback that will search the database for user record.
<code>on_btnHelp(*args)</code>	Callback that will display the user documentation for the program.
<code>on_btnSave(*args)</code>	Callback that will save any changed information to the database.
<code>on_popClear(*args)</code>	Callback for popup menu Clear.
<code>on_popCloseMenu(*args)</code>	Simply provides a way for the popup menu to be removed from the screen.
<code>on_popCopy(*args)</code>	Callback for popup menu Copy.
<code>on_popCut(*args)</code>	Callback for popup menu Cut.
<code>on_popPaste(*args)</code>	Callback for popup menu Paste.
<code>startup()</code>	This function is run just before the program is presented to the user.

You can see that the two functions that I included with the `..py:function::` directive, are hyperlinked to the section that I added in the main document.

You can create a special `.rst` file that holds all the `..py:function::` directives to make it easier to add more information about each of those functions if you wish. Simply place the extra `.rst` file in the same section before your `api.rst` inclusion in the toctree section.

One word of warning here. If you are using Formiko as your `.rst` editor, you will end up with a number of warnings in the preview window. These are usually a “System Message: Error/3” warning. You can usually ignore these messages, since they refer to unknown directives. I’m fairly certain that the folks at Formiko will get these added or addressed in the near future.

System Message: ERROR/3 (<string>, line 114)

Unknown directive type "autofunction".

```
.. autofunction:: sphinxDemo1_support.load_tcl_themes
```

Conclusion

If you are getting a number of errors when you do your build, the first thing that you should look at is the directive formatting and the line(s) following the directive. Sphinx is VERY picky about formatting and white space. It's usually something very simple.

I've created a repository as I often do. I included the Sphinx index.rst and conf.py file to make it easy for you to have a reference to this month's information.

The repository is located at <https://github.com/gregwa1953/FCM-205>. This repository is a little different from my normal ones. There are two folders that hold the demo files. The first is the code folder which holds all of the files for the demo program, including the PAGE .tcl file and the docs folder that has the Sphinx documentation HTML file. The other folder is the SphinxSource folder which holds the images folder, api.rst, index.rst and the conf.py files.

I also included the generated HTML file in the code/docs/html file as well as enabled the help button in the sample program to display the HTML on demand.

Until next time, as always; stay safe, healthy, positive and creative! Greg

***Greg Walters** is a retired programmer living in Central Texas, USA. He has been a programmer since 2002 and in his spare time, he is an author, amateur photographer, luthier, fair musician and a pretty darn good cook. He still is the owner of RainyDaySolutions a consulting company and he spends most of his time writing articles for FCM and tutorials. His website is www.thedesignedgeek.xyz*

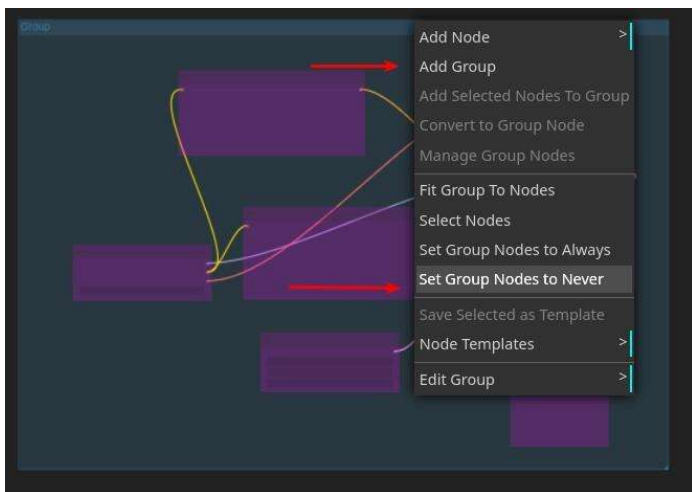
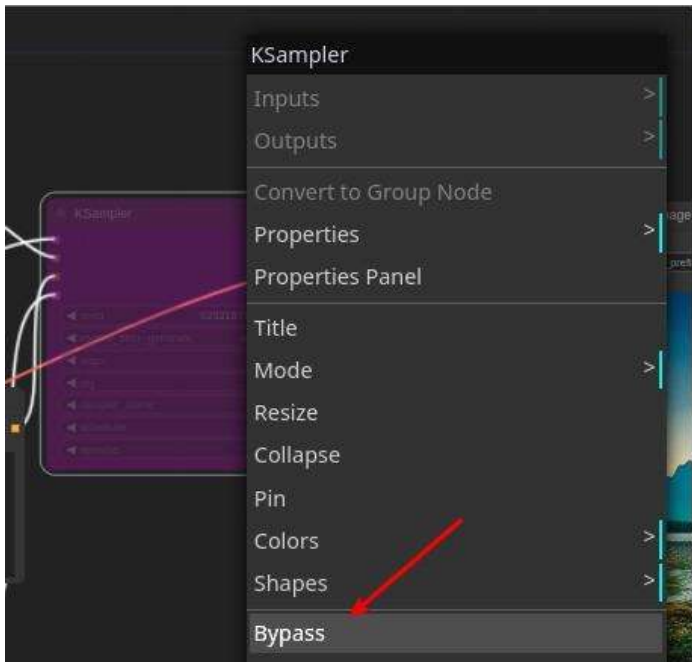
[RETURN TO CONTENTS](#)

HowTo: Stable Diffusion

Part 14 - ComfyUI-2

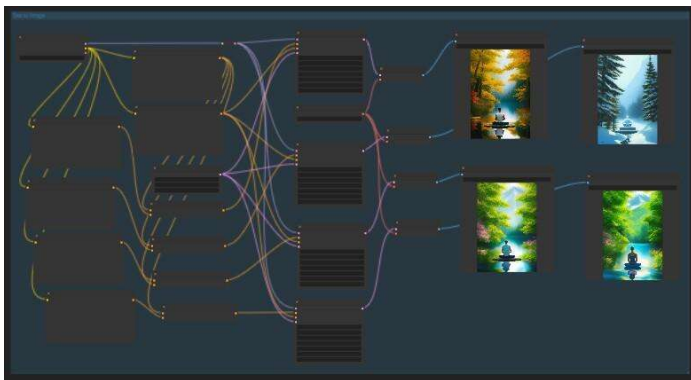
Written by Jon Hoskin

This time we continue with ComfyUI. We will start off with a useful feature and then create both a parallel and series workflow. The useful tip is bypassing individual nodes which you can do by right-clicking on one, such as the KSampler node shown, and selecting Bypass, which will turn the node purple indicating it's no longer viable if you run the Prompt. Selecting Bypass again reverses the selection. This allows you to add nodes and retain the old workspace version to try something new without worrying about losing the current version. (This is helpful but don't forget to save any needed new workspace for future use.) Likewise, you can do the same thing with the entire workflow by right-clicking and selecting Add Group, then stretching the blue rectangle to cover all nodes. Then right-clicking again gives you the option of Bypassing Group Nodes, turning all nodes to purple. Repeating and selecting Set Group Nodes to Never will un-bypass the group.



Why is this very useful? – You can copy the entire workflow and paste it on the same page allowing you to make changes without starting on a new workflow. You don't lose anything in the original version, and can switch back and forth as needed to run only the active one.

Next we will create parallel processes in a workspace. Consider that you may want to create an image with each of the four seasons. Essentially you need to make four identical workflows all starting from the same beginning. Start with the original image workflow, copy the KSampler and paste it with Ctrl-Shift and V three times, each with the same starting connections. All that's needed then is to add a CLIP Text Encode (Prompt) for each season with the prompt word summer, fall, winter or spring. Combining each season with the original positive prompt via a new Conditioning (Combine) Node and using that as the positive Prompt to the KSampler allows you to get the desired output images.

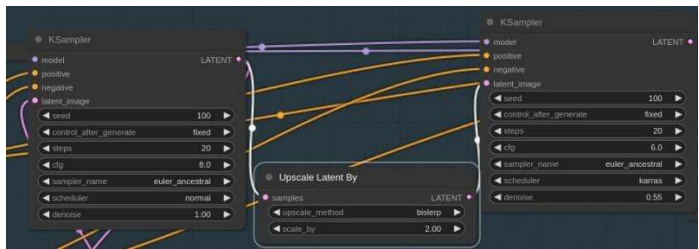


While the workflow looks confusing, it's four copies of the same thing except for the added Prompt via the Combining Node. We can do something similar but as a series. We previously up-scaled an output, only to find it made the image bigger but with no higher resolution.



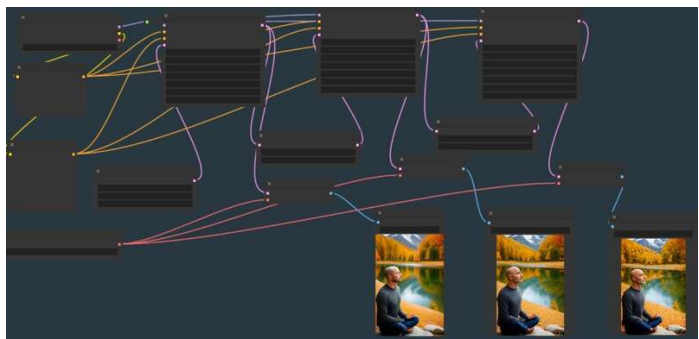
To solve that issue, we will chain three KSampler nodes with an Upscale Latent Node taking the output Latent from the first KSampler node to the second KSampler node via a Latent Upscale By node; we will repeat the same steps from the second

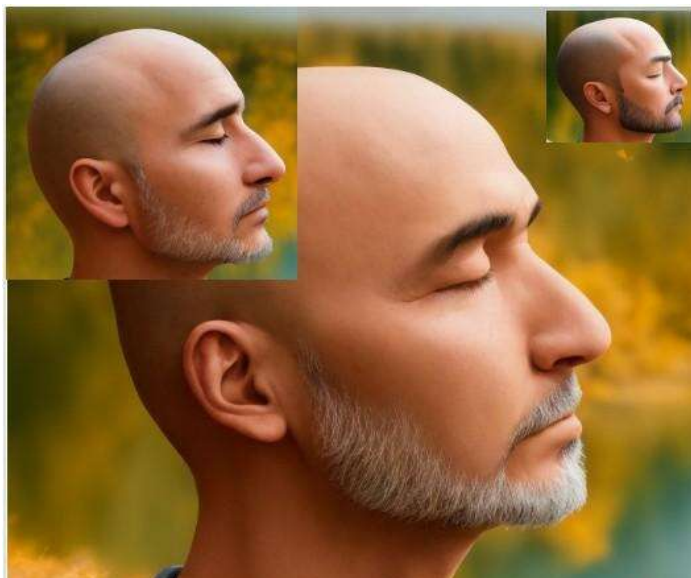
KSampler node to the third KSampler node. I used a scale_by 2.0 for both Latent Scale By settings. In each of the above examples, if the first image doesn't look good you can simply stop the workflow via the Queue Prompt manager before it finishes to save time which is particularly important if it's a slow process.



The result shows the workflow with apparently three exact images. However, I cropped heads from the three outputs and you see a noticeable difference. The images are not only larger but have higher resolution because more information has been used to create the images.

Next time, we will look at yet another interface UI version named Foocus. It doesn't have the flexibility of ComfyUI to control each step but for simplicity it's hard to beat.





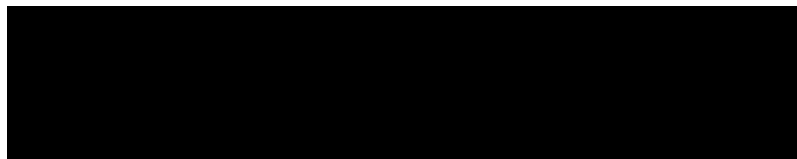
[RETURN TO CONTENTS](#)

HowTo: Latex - Even More Tables

Written by Robert Boardman

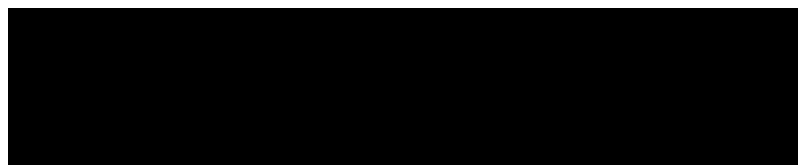
Last time the column was about tabs and tables. One of the big drawbacks with default tables is they cannot extend over the end of a page. An author is limited to tables that are one page or less in size. If a tabular environment extends beyond the limits of one page the extra content overwrites the page's bottom margin and gives an Overfull \vbox message when compiled. Two packages have been built to overcome this difficulty: supertabular and longtable. They have different features and have their own strengths and weaknesses (as is true of all packages).

Supertabular evaluates the amount of used space every time it encounters a `\` command (remember `\` tells Latex – Tex to insert a line break and carriage return). When the amount of used space equals the allowed text height, then supertabular closes the tabular environment, starts a new page with the appropriate header and then re-opens the tabular environment. This method implies that column widths (and the corresponding table width) can vary from page to page. Because supertabular uses an estimate of the content-free space available on a page, this estimate can sometimes be wrong. There are ways to control both row-height and column-width to prevent situations in which the table width varies from page to page, or to prevent the last row of a table from being placed on a page by itself.



Supertabular is an environment that first requires the package

to be loaded, and then requires the environment to be started. It also requires the environment to be closed. There are four somewhat different commands which can be used to begin the environment depending on the needs of the author.



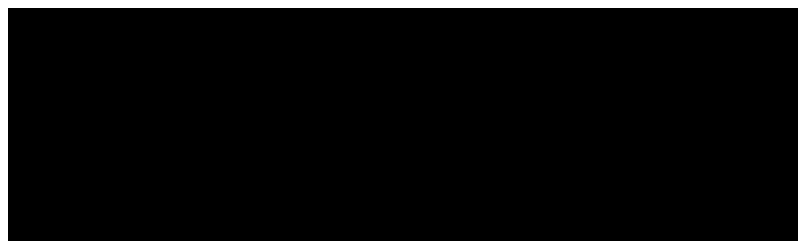
`colspec` is set up the same way as the `tabular` environment. It indicates how many columns, what the alignment of the contents will be, and often the character used to separate columns from each other.

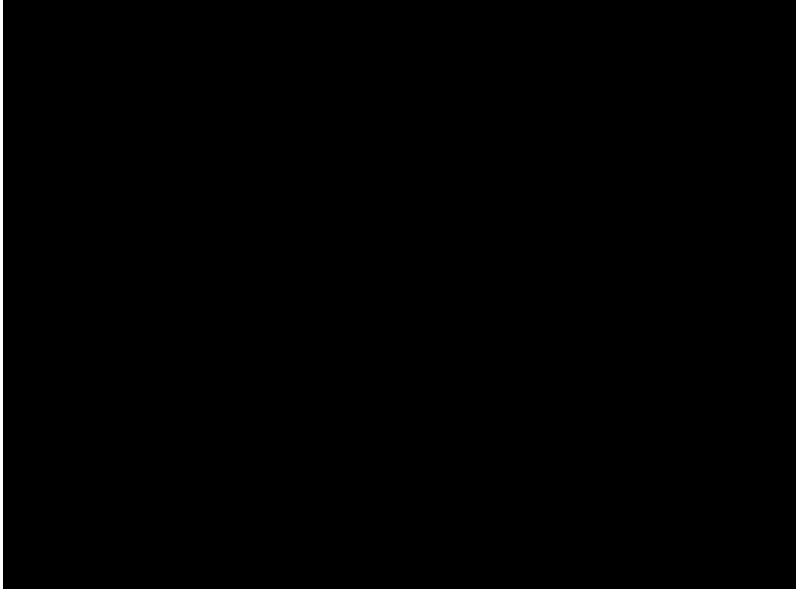
Width is a required attribute. As you would expect it sets a fixed width for the table.

The `mpsupertabular` environments wrap each `supertabular` environment into a `minipage` environment. This allows the `footnote` command to be used inside the table and the footnote is printed at the end of the relevant page.

The command `shrinkheight{height}` may be used to shrink (or increase if a negative length is used) the height of a row. This is useful in situations when the last row of a table appears at the top of a page. It is put at the start of the affected row. For example, in the sample table, it is possible to shrink the row originally at the bottom of the first page so the row at the top of the second page moves up.

For more options read the documentation for `supertabular`. Although it is 24 pages long, most of the content is an explanation of the inner workings of the `supertabular` macro. There are also a few example long tables which reward the reader who invests a little time to understand them.

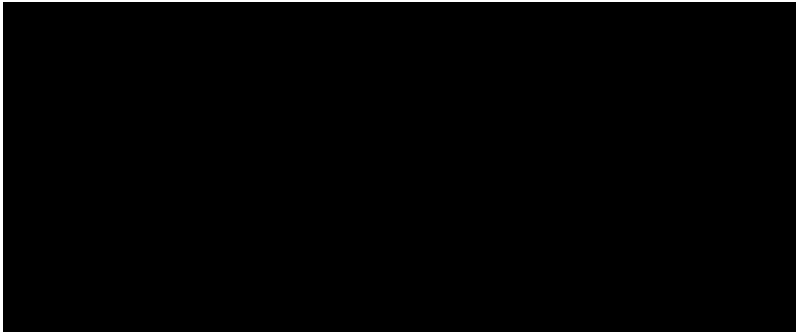




Longtable: Like supertabular, this is also an environment which aids the writer to use tables that require more than one page. Like supertabular, the 27-page documentation is mostly details of the macro coding. Like supertabular, the documentation has some valuable examples.

The longtable environment saves information about the width of each table in an aux file. It then uses this information in a second compile to calculate and set the width of each column to the widest required by the contents. This implies any file that uses longtable should be compiled several times before accepting the final pdf output.

The major difference between supertabular and longtable is most parameters in longtable are set inside the code for the longtable environment, most for supertabular are set before or outside the environment. There are a few parameters set in the sample code below.



Notice the [c] instruction in the begin command. With longtable, the position of the table can be set either l(ef), c(enter) or r(ight) in the begin command. With supertabular the table position is set outside the supertabular environment. (See the begin{center} command in the supertabular code fragment.

There is a third environment which can be used for multi-page tables called xltabular. I leave it to you to investigate if this is of interest.

Word List: English-Pinyin-Character Unicode

English	Pinyin	Unicode
A little	yi dian er	[4E00][70B9][513F]
A long time	Changjiu	[957F][4E45]
All, both	Dou	[90FD]
Also	Ye	[4E5F]
American person	Meiguoren	[7F8E][56FD][4EBA]
And (only with nouns)	He	[548C]
And you (formal)	Nin ne	[60A8][5462]
And you (informal)	Ni ne	[4F60][5462]
Ask	Wen	[95EE]
Banana	Xiangjiao	[9999][8549]
Bicycle	Zixingche	[81EA][884C][8F60]
Bitter	Ku	[82E6]
Bitter melon	kugua	[82E6][74DC]
Black	Heise	[9ED1][8272]
Blue	Lanse	[84DD][8272]
Book	Shu	[4E66]
Brown	Zongse	[68D5][8272]
Business	Shangye	[5546][4E1A]
Business	Shengyi	[5546][4E1A]
Busy	Mang	[5FD9]
Carrot	Huluobo	[80E1][841D][535C]
Celery	Qincai	[82B9][83DC]
Often	Changchang	[5E38][5E38]
Chinese character	hanzi	[6C49][5B57]
Chinese language	Hanyu	[6C49][8BED]
Classmate, student	Tongxue	[540C][5B66]
Company, business	Gongsì	[516C][53F8]
Cucumber	Huang gua	[9EC4][74DC]
Dad	baba	[7238][7238]
Dangran	Of course	[5F53][7136]
Day	Tian[FF0C] or ri	[5929][FF0C][65E5]
Younger brother	Didi	[5F1F][5F1F]
Dish	Cal	[83DC]
Doctor	Daifu	[5927][592B]
Doctor	yisheng	[533B][751F]

As noted above, page breaks in multi-page tables occur only at breaks between rows (or at hline commands). Usually this

default behaviour is preferable. This can cause design problems in some instances. Occasionally it is necessary to break the contents of one row over two pages. There is a manual “fix” for this situation which involves adding some line breaks and empty cells to force the cell contents to arrange in a particular way along with the `parfillskip` command so text aligns properly. If you have a situation like this, read over the guidance on pp. 464-466 in volume 1 of *The Latex Companion* (3rd edition).

Erik and I have presented coding about tables three times now, so enough about tables. Next time another adventure with Latex.

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KILOBYTE MAGAZINE

Kilobyte Magazine is a fanzine for 8bit enthusiasts. It covers consoles, computers, handhelds and more, as well as new games for old systems. If you grew up with Commodore, Atari, Sinclair or Amstrad, this magazine is for you.

<https://retro.wtf/kilobytemagazine/>

HowTo: Drawing with Inkscape - Part 145

Written by Mark Crutch

Anyone who has used Inkscape's text tool extensively is sure to have come across the issue of too many fonts being listed, making it hard to find the one you're looking for. This may be because you're an ardent collector of all manner of weird and wonderful typefaces, or it might just be because operating systems tend to ship with quite a range by default. This is definitely the case with some Linux distributions, which may come with a variety of fonts to cater for users who need something beyond simple Latin text. For example, here's a fragment of the font list that Inkscape displays on my British English Ubuntu box, on which I've never knowingly installed non-Latin fonts:

Anton		▼	Normal	▼	10	▼	pt	▼
Impact	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
Jamrul	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
Journal	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstArt	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstBook	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstDecorative	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstDigital	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstFarsi	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstLetter	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstNaskh	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstOffice	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstOne	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstPen	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstPoster	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstQurn	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstScreen	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstTitle	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							
KacstTitleL	AaBbCcIiPpQq12369\$\342\202\254\302\242?./\()							

See all those ‘Kacst’ prefixed entries? A bit of online searching reveals that KACST stands for “King Abdulaziz City for Science and Technology”, and this is a family of Arabic typefaces – something that the font preview in Inkscape doesn’t indicate. Given that my ability to write Arabic is totally non-existent, I don’t really have any need for these fonts, but they’re also not intrusive enough to my day-to-day work that I’ve ever put any effort in to remove them. And so they just sit there, never used, yet taking up space in the font drop-down, forcing me to scroll further to get to all the later fonts in the list.

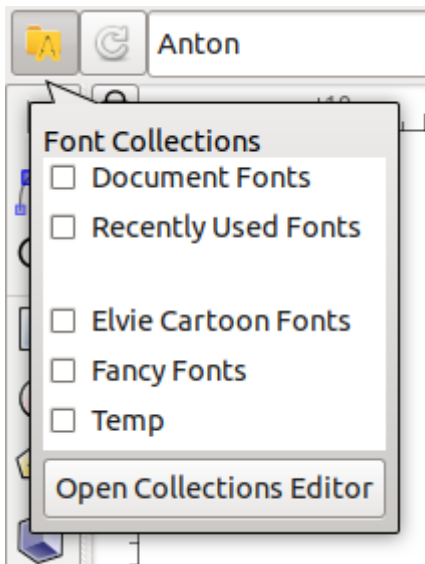
Professionals in the design industry may be familiar with font organisers that work at the OS level, either included as a native part of the operating system or via a third-party tool. These

allow you to create collections of fonts which can be enabled or disabled on the fly. This might allow you to create a base collection of general workaday fonts as a single group. You could then have another collection with some customer-specific fonts in it, and enable both the base and the customer-specific one at the same time. This makes it more convenient to work on a specific customer's projects, as you're presented with only the relevant fonts within your design software. It also makes it much easier to deal with commercial fonts that might be licensed to one single customer and which shouldn't be used on other projects.

Inkscape 1.3 adds a similar capability built directly into the application, rather than operating at the OS level. By default, you'll still be presented with the complete list of all fonts on your machine, but the tool control bar for the Font tool now features a couple of new buttons at the far left which help you to work with font collections.



Clicking the leftmost button will open a pop-up which lists your current font collections, plus a button for opening the collections editor. At the top of this list will always be a pair of pseudo-collections that contain only those fonts currently being used in the document ('Document Fonts'), or those that you've recently used across any documents ('Recently Used Fonts'). For a lot of casual users, these alone might be sufficient to make font selection a more sane operation.

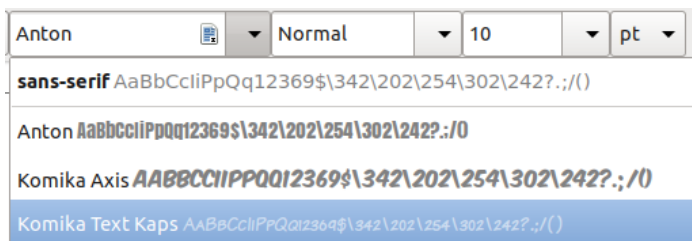


For those who want to go a bit further in their font management, clicking the button to open the collections editor is your route to creating as many different collections of fonts as you wish, as we'll see shortly. While we're looking at this pop-up, however, it's worth noting two key things about font collections:

- *A single font may appear in as many (or as few) collections as you wish. It's fine to have your favourite handwriting font in both your 'Cursive' and 'Favourites' collections, while leaving never-used fonts out of all your custom collections entirely.*
- *You may select more than one collection at a time in this pop-up. The list of available fonts will then contain an alphabetically sorted combination of the fonts across all the selected collections, though duplicates are removed so that each font will appear in the final list only once.*

Looking at this in practice, you've already seen how my unfiltered list of fonts contains many that I'll never use. If I'm working on one of my 'Elvie' comics (which appear in Linux Pro Magazine), then I want to limit the fonts to those that are used for the strip. This is especially important to get right,

because Elvie is released entirely under a CC-BY-SA licence – including the source files – so I use only freely licensed fonts that I can also distribute alongside the artwork itself. In the pop-up, therefore, I can select just that one collection and my list of fonts becomes a whole lot more manageable, and my licensing concerns become a lot simpler.



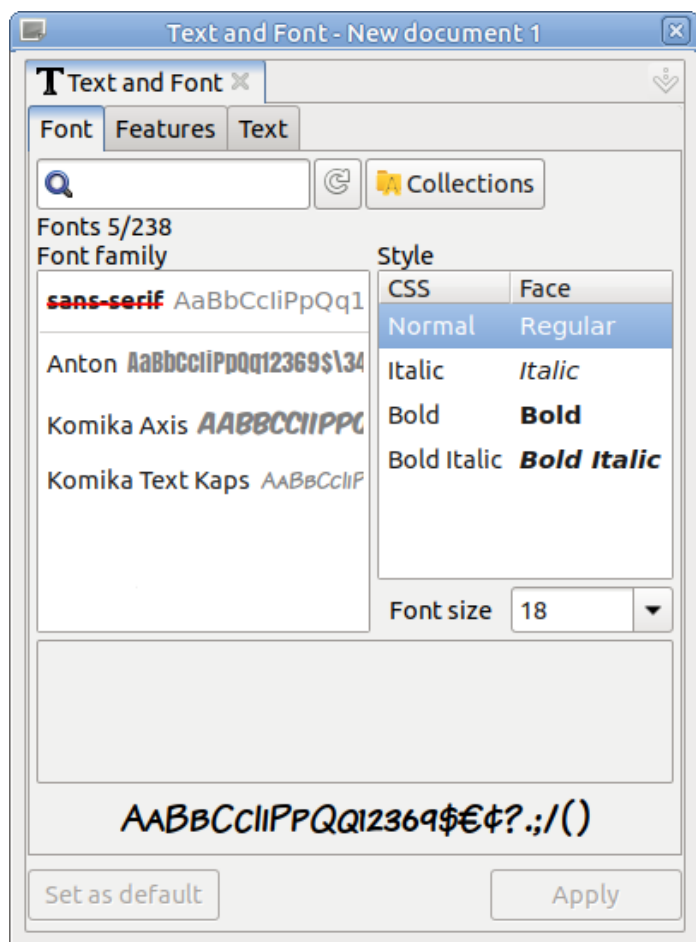
Returning to the longer list that shows the complete list of fonts can be achieved in one of three ways:

- *Open the pop-up again, and un-check all the collections*
- *Click on the second button on the toolbar, which does the same thing with a single click*
- *Click the similarly styled ‘Reset filters’ button in the ‘Text and Font’ dialog*

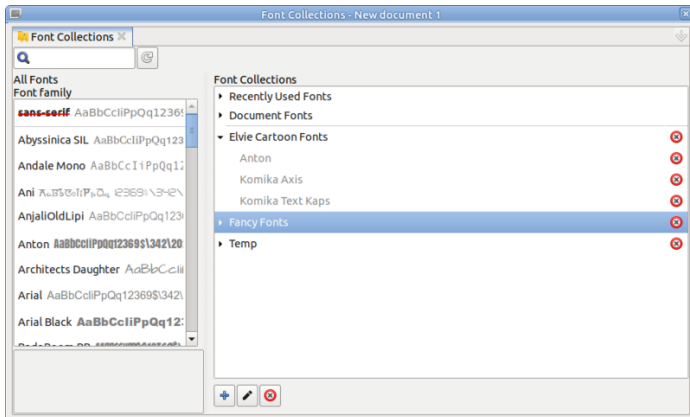
Rather than returning to the complete list, you’re also free to open the pop-up and toggle any of the collections on or off at any time. It’s important to note that turning collections off here affects only the visibility of the fonts in the font selection drop-down and in the ‘Text and Font’ dialog. It doesn’t alter your drawing in any way, so don’t worry that de-selecting a collection will disable or hide any existing text in your document.

The ‘Text and Font’ dialog (under the ‘Text’ menu, or press Ctrl-Shift-T by default) has also gained a reset button, as mentioned above, as well as a ‘Collections’ button which opens the same pop-up for enabling and disabling collections. There’s even a count of how many fonts are being displayed compared with the total you have available. I’m not sure how useful that statistic is in practice, but at least it acts as an indicator that

you have one or more collections enabled, rather than leaving you thinking you've lost some fonts.



That's enough about turning collections on and off: the question now is how you go about creating them in the first place? The pop-up features a button at the bottom labelled 'Open Collections Editor', which does indeed open a dialog to manage the collections. Unfortunately this is where the feature begins to lose its polish somewhat.



This dialog definitely does its job, but it feels like it escaped the attention of the UX team who have been doing such great work with recent Inkscape releases. Even the search box and reset button feel a bit cramped up in the corner. They're pretty tight to the edge in the 'Text and Font' dialog, but this part of the application reduces some already tight spacing even further.

It's easy enough to get past minor layout issues like that, but it's when you start to interact with this dialog that it becomes especially clunky. Initially the Font Collections list will just show the pseudo-collections for recently-used and document fonts. Clicking the '+' button at the bottom lets you create your own custom collection. You'll be presented with a blank row in the list, with an input field to give it a name. You can actually just press Enter and you'll be left with a confusing entry that has no name, and to which you can't add any fonts. If you change your mind and press the Esc key to cancel the operation, you similarly end up with a blank entry. So don't do that: make sure to give your collection a name as you create it, to avoid confusion later.

Your newly created collection will appear in the list, but without the small disclosure triangle next to it. Let's add some fonts to it, by first selecting the collection and... then what? My immediate assumption was that I would be able to click on fonts in the list at the left to toggle them on and off: selected fonts would be in the collection, while unselected fonts

wouldn't. But it doesn't work like that. My next attempt was to click on each of the fonts I wanted in the collection in turn – but that just selects them one at a time, and doesn't add them to the collection at all. Perhaps double clicking on a font name would work? Nope. Select and press Enter? Also nope.

Instead you have to drag-and-drop the fonts from the left-hand list into the collection using the mouse. One-by-one. There's no multi-selection allowed in the list, even if you want to drag a whole block of fonts, such as those from the same family. Drag-and-drop is an awful approach for something like this: it's too easy to slip with the mouse and drop your font into the wrong collection. By all means allow it as an option, but it's not a great design for a dialog in which you might be dragging dozens – maybe even hundreds – of items, one-by-one, to a relatively small target.

You can improve your odds once the first font has been added by opening the collection using the newly-appeared disclosure triangle on the left. Now the drop target is double the size, and grows larger still as more fonts are added. As you drag fonts over the collection, rows and the spaces between them get highlighted as a drop target indicator. But ignore the fact that this indicator changes in a way that suggests you can order the entries in the collection, because you can't. It doesn't matter where in the list you drop a font, they will appear in alphabetical order.

This alphabetical ordering extends to the font selection dropdown in the tool control bar, and to the list in the 'Text and Font' dialog. This means that, although font collections allow you to work with shorter, curated lists of fonts, you still have no way to ensure that your preferred fonts always appear at the top of the list, especially once you begin to enable multiple collections. To be fair, such a feature would raise other UX questions which don't have clear-cut answers. But if the developers aren't prepared to tackle those questions, the editor shouldn't work in a way that suggests the ability to order the items, even though it doesn't actually allow it.

My next complaint with this dialog is that the fonts that have

been added to a collection appear in a greyed-out color, as though they've been disabled in some way. I understand that this is probably to distinguish them from the collection title, but the indentation level is largely sufficient for that without giving the impression that the fonts are somehow not available or not working. Once added to a collection, the entry in the list also lacks any preview of the font (like the one that's present in the left-hand panel). This makes it harder to review collections when you return to them some time later – especially if you have a lot of similarly named fonts, as can easily happen with some families of related designs (such as those 'Kacst' fonts from earlier).

Removing a font from a collection is as simple as clicking the button at the right of the row, or the delete button at the bottom when a row is selected – but not by pressing the Delete button on the keyboard, that would make far too much sense. The font is removed from the collection immediately, with no confirmation. While that makes it more immediate when initially setting up your collections, it also opens up the possibility of a mis-click removing the wrong font. Perhaps an option to 'lock' a collection against edits might be a useful addition for a future release.

Deleting an entire collection is a little more sensible: the button is the same, but this time the deletion occurs immediately if the collection is empty, but with a prompt if it's not. At least that prevents a simple mis-click when removing a font from deleting an entire collection.

Finally, you're free to edit the collection name whenever you wish, even after it's been created and populated. There's a dedicated 'pencil' button at the bottom of the list for this, but just clicking twice on a collection name in the list does the same job. As does pressing Enter when the collection is selected.

The fact that they're so easily editable means that you can use this as a way to 'archive' collections that you're not using at the moment, given that there's no way to disable a collection. Prefix them with a 'Z', for example, to push them to the bottom

of the list. Or perhaps you could use this to promote more important collections to the top (prefixed with an 'A' or a punctuation character). This possibility relies on the fact that collections are also displayed in alphabetical order – but, unlike fonts, you have control over the names you use. Just be aware that this sorting is based on alphabetical order and doesn't really have a concept of number systems: in this case '20' comes between '1' and '2', so if you want to use numbered prefixes to sort your collections into order, make sure to add a zero to the start of the single digit entries (if you expect to go beyond ten).

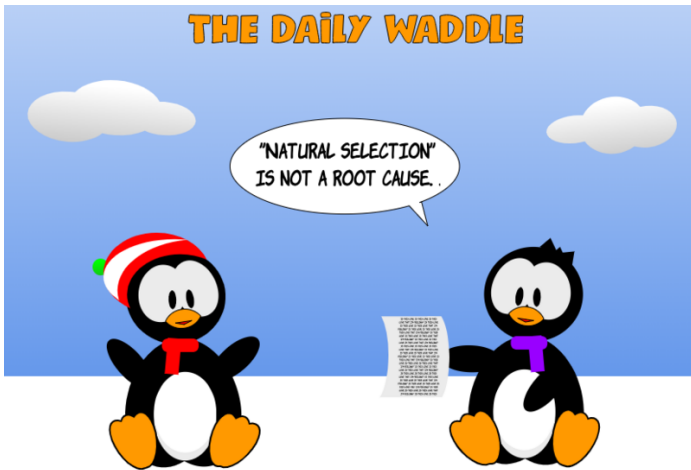
Font Collections	Font Collections
▶ Recently Used Fonts	▶ Recently Used Fonts
▶ Document Fonts	▶ Document Fonts
▶ 1 First	▶ 01 First
▶ 20 Way down the bottom, surely?	▶ 02 Second
▶ 2 Second?	▶ 03 Third
▶ 3 Third?	▶ 20 Way down the bottom

In general I really like the addition of font collections to Inkscape. It's just a shame that the UI for managing them is a little clunky and too easy to make mistakes with. Hopefully this is something that will improve in time. Even just being able to double-click fonts rather than drag-and-drop them would be a huge usability improvement, though I'll also hold out hope for being able to disable and lock collections. Who knows, perhaps we will be able to sort fonts one day – or at least flag some of them as favourites to have them consistently appear at the top of the list.

Mark uses Inkscape to create comics for the web (<http://www.peppertop.com/>) as well as for print. You can follow him on Twitter for more comic and Inkscape content: @PeppertopComics

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THE DAILY WADDLE



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Micro This Micro That – Part 29

Written by Greg Walters

The 2038 Problem

Greetings fellow Sentient Lifeforms. Beaming yet again from somewhere in time and space, I come again to either inspire or bore you. Hopefully it is the former and not the latter.

At the end of last month's article I said...

"If you are old enough to remember 'Y2K', you'll be either happy, or scared, to know that in 2038, there will be another one. Hopefully, we will be more ready for that issue than we were back in 1999. We'll talk about that next month."

Well, now it is next month, and that's what we'll talk about. The 2038 problem. But you might not remember Y2K and what it meant to people and the computer industry, so we'll hop into the Tardis and zip back to 1999 for some perspective first.

What was Y2K

Back in the 20th century, when one wanted to write the date, in the US they would write it like "mm/dd/yy" or in the 'civilized' world, they would write it "dd/mm/yy" where 'yy' was the last two digits of the year. So if they wanted to write a date on a cheque, they would use '05/11/64' or, in the uncivilized US, we would write it '11/05/64'. This was something that went back to before the 20th century started. (According to one of my special secret sources, back in the early 1960's, some people (and software writers) used only one digit for the year!) It wasn't because people were lazy, it was just that everyone KNEW the century and there was no reason to state the obvious.

Once computers started to become popular and part of everyday life, this habit continued. In databases and applications around the world, the habit was maintained. Part of the reason for this was that the cost of memory per kilobyte on disk, ram, and tape (yes, tape) at one point, was over US \$100. Think of how much Ram and Hard drive space you have on your home or office computer and then multiply that by 100! When storing date information, those two bytes of memory that hold the '19' would add up and quickly become a stumbling block. It was easy, when needing to print the date on paper or CRT (screen), to just print "19" and then append the two digit year to the end.

Somewhere around the early 1980s, it dawned on someone just how big a problem this could be. Storing someone's date-of-birth could show up as 53, but would that be 1853, 1953 or 2653? No way to know. And that was the problem. Anything that stored a date on any kind of computer or computer media, could be a very big problem. So not just date-of-birth but loan payments, school records, driver permits and so on were immediately suspect and the subject of potential problems. However, most of those people in charge of things said "What's the rush? It's a long time until the year 2000! We'll take care of it long before it becomes a problem."

When December 1999 came around, most companies had taken care of it, but there was the lurking concern that while your company had taken care of the issue, how many others out there had not? How many of your vendors or customers had never gotten around to fixing the issue.

Luckily, there were only a handful of situations that showed up. However, I remember sitting in Central Texas on December 31, 1999, on emergency call with the company I work for, in Colorado, waiting for the phone to ring with my boss saying that there was a problem with our software because we missed something somewhere that caused our software package to show the date as January 1, 1900.

What is the 2038 problem?

To quote from Wikipedia, *“The problem exists in systems which measure Unix time – the number of seconds elapsed since the Unix epoch (00:00:00 UTC on 1 January 1970) – and store it in a signed 32-bit integer. The data type is only capable of representing integers between $-(2^{31})$ and $2^{31} - 1$, meaning the latest time that can be properly encoded is $2^{31} - 1$ seconds after epoch (03:14:07 UTC on 19 January 2038). Attempting to increment to the following second (03:14:08) will cause the integer to overflow, setting its value to $-(2^{31})$ which systems will interpret as 231 seconds before epoch (20:45:52 UTC on 13 December 1901).”*
https://en.wikipedia.org/wiki/Year_2038_problem

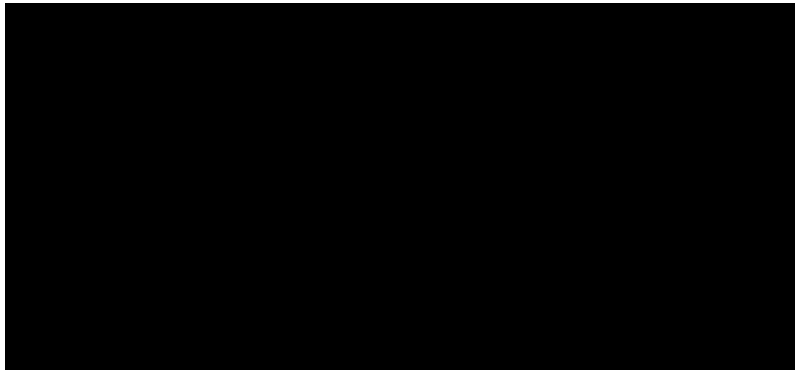
With 14 years before this could be a problem, many of the systems that would possibly be affected have already been fixed. The simple fix is not to use a signed integer to hold the number of seconds, but to use a long integer. Operating systems, mainframes, even home computers, are already fixed to avoid this issue.

MicroPython and the 2038 problem

While Python and Linux (and I assume Mac and Windows) have all prepared for the 2038 issue, MicroPython (at least up to version RPI_PICO_W-20240509-v1.23.0-preview.360.gc3301da17.uf2) has not.

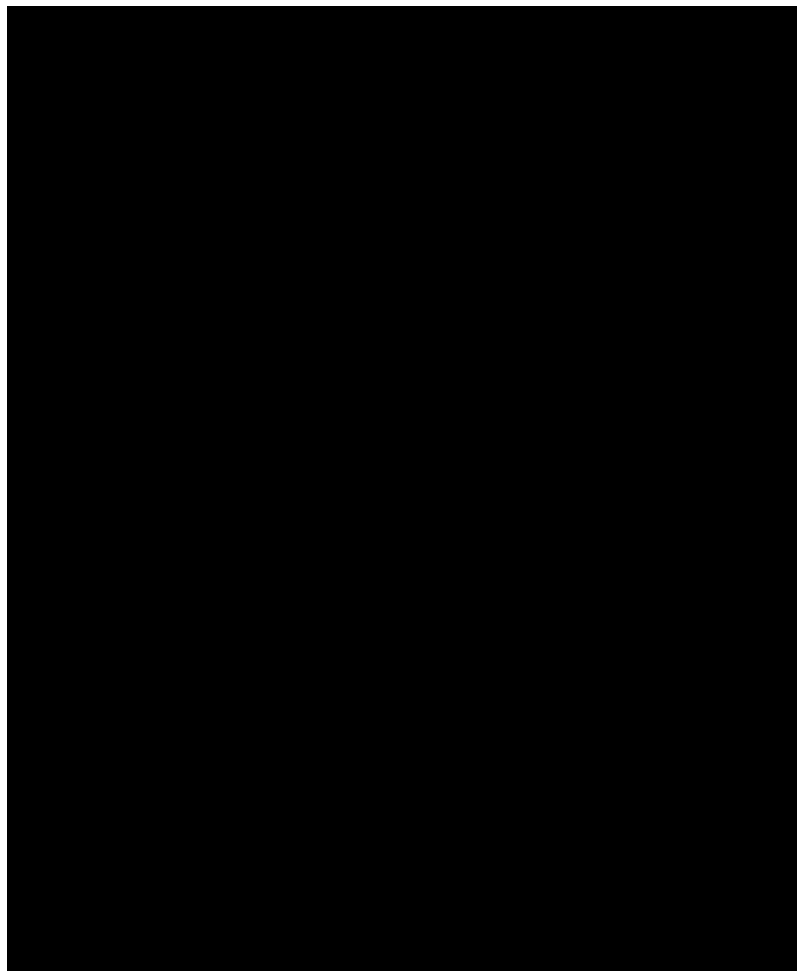
The impact is that when the time and date on the microcontroller reaches 03:14:08 January 19, 2038 UTC, the system will crash with an error “OverflowError: overflow converting long int to machine word”.

The Code



The Output

The output in the REPL shows the following...



I even put in an issue report on <https://github.com/micropython/micropython-lib/issues/842>, which (to date, 10 May, 2024) no one has commented on, or as far as I can tell, even looked at it.

Wrap up

While a large part of me thinks that none of the microcontrollers that we are using today will make it until 2038, I'm pretty sure that a few will, just because they will keep working without problems until then. Hopefully, there is nothing critical running with current code until then.

Until next time, as always; stay safe, healthy, positive and creative! Greg

***Greg Walters** is a retired programmer living in Central Texas, USA. He has been a programmer since 2002 and in his spare time, he is an author, amateur photographer, luthier, fair musician and a pretty darn good cook. He still is the owner of RainyDaySolutions a consulting company and he spends most of his time writing articles for FCM and tutorials. His website is www.thedesignedgeek.xyz*

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UBports Devices:



Written by UBports Team

Congratulations to Canonical on the release of Ubuntu 24.04, Noble Numbat, earlier this week. On the back of that there is also a new Ubuntu Unity 24.04. All the details are covered in the following short blog by Rudra Saraswat

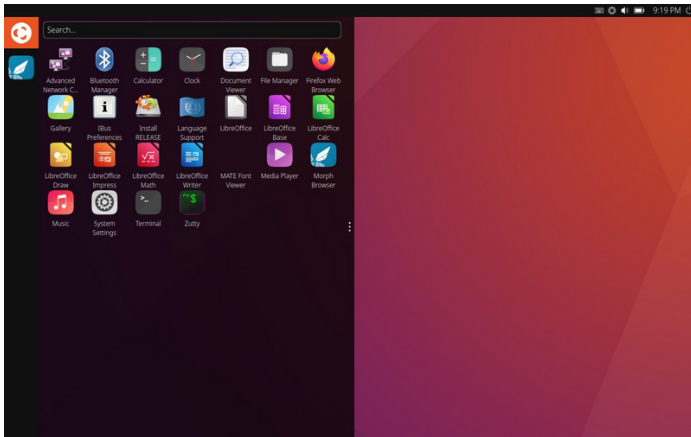
Ubuntu Unity 24.04 "Noble Numbat" has now been released! You can download it from <https://ubuntuunity.org>.

Ubuntu Unity 24.04 continues to use Unity 7.7, which has undergone maintenance. Our primary focus for this release has been to have a working Lomiri variant in collaboration with the UBports Foundation, to serve as an alternative to Unity7 since we're stuck with X11 for the time-being. This requirement arises from certain dependencies, including Nux – the UI toolkit used for rendering Unity7's user interfaces. UnityX, too, uses Nux unfortunately (since it's a fork of the Unity7 codebase), and so, while it can be made to run under stacking Wayland compositors like Wayfire and labwc, it would continue to rely on X (Xwayland in this case), and so would act only as a stop-gap. Getting around this would mean an entire rewrite, and so, while Unity7 isn't going away anytime soon, Lomiri would act as a suitable replacement if a need ever arose.

We've moved over to Calamares as the installer included in the ISO (similar to the Lubuntu and Ubuntu Studio installers on previous releases – if you've ever tried them – which for that matter, you definitely should!). We would like to thank Aaron

Rainbolt and Simon Quigley for integrating Calamares with our existing Ubuntu Unity live session.

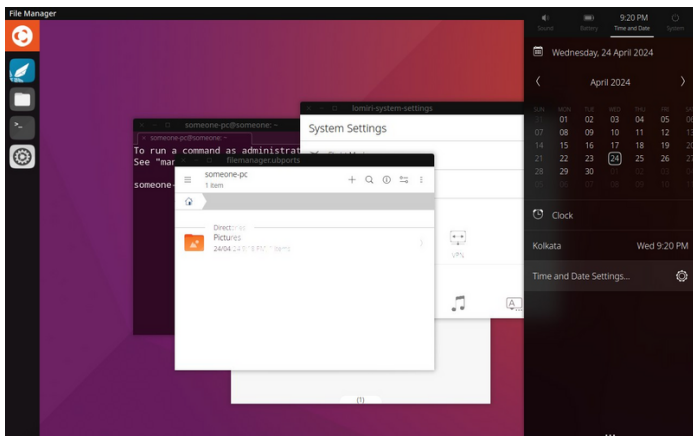
Now speaking of Lomiri, we're aware that for the past few years, a lot of you have been eagerly awaiting Lomiri desktop images. And well, for those of you, we have some thrilling news: the first 24.04 Lomiri testing ISO is now publicly available!



Over the past few years, the UBports team (special shout-out, in alphabetical order, to Alfred Neumayer, Marius Gripsgard, and Mike Gabriel!) have been hard at work, improving desktop compatibility and getting every single one of the Lomiri packages into the Debian repositories, and subsequently, they made their way into the Ubuntu repositories too. Following which, we decided it would be a good idea to build an installable, daily-driveable ISO, for your viewing and testing pleasure.

The Ubuntu Lomiri ISO I have built can be found here: <https://ruds.io/cloud/s/eNiJxnc7qk2tpKN>

Unlike the half-broken testing Lomiri ISOs I have built in the past, this one's quite stable and can be installed on real hardware, while also including the Ubuntu Touch LightDM greeter and for that matter, several apps you'd only expect to find on Ubuntu Touch. Do bear in mind, however, that you may encounter occasional crashes here and there.



Volla Tablet

The new Volla tablet launched the other week on kickstarter <https://www.kickstarter.com/projects/volla/volla-tablet-simplify-your-digital-life>

The tablet will be available with both Volla and Ubuntu Touch OS, and with 21 days to go, has nearly doubled the original pledge target. This could be a very popular device, so if you want to get involved take a look at the kickstarter page.

Volla Community Days

UBports have been invited to attend the next Volla Community Days event in Remscheid on the 15-16th of June. The event will be broadcast live via the Volla YouTube channel on both days with a recording available after the event.

Planned events include presentations, demonstrations, interviews, and discussions, and a hackathon running alongside the main event, with a prize being awarded on Sunday afternoon.

The new Volla Tablet running Ubuntu Touch is sure to get a showing along with a couple of other items we may be involved in. More details as we get closer to the event.

voLTE and 5G

Marius showed videos of both voLTE and 5G running on UT devices during Q&A 138. A big step forward but not fully resolved yet. We are now using the proprietary Sailfish ofono binder plugin for voLTE, and more work and testing is needed. Of the two, by way of a sort of happy accident, 5G should be available first, and has been tested on FP5 and 4, but should, in theory, work on devices with Android 9 and above. Both of the videos show these running on Qualcomm but, thanks to Nikita, they are also on Mediatek.

This has been a long journey with many false paths but things are really close now.

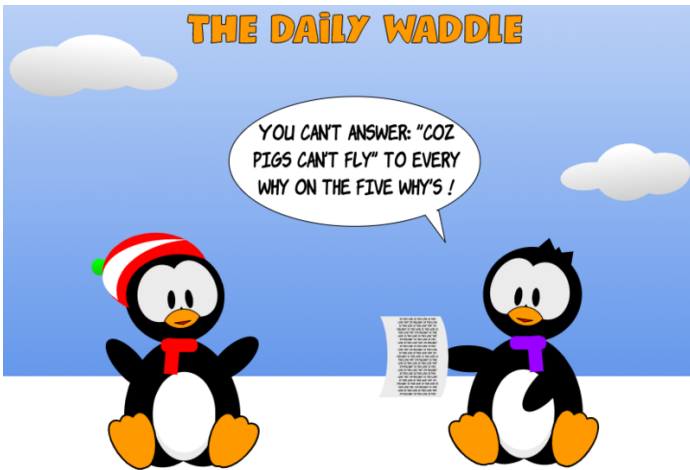
We will obviously keep you all updated on progress and testing opportunities as they arise and become available. Marius should be putting instructions on how to install the 5G ppa on the forum before everything is merged upstream for those who wish to give it a try.

Work is ongoing on a new contact backend to bring contact sync to UT. The Forum thread is available at <https://ubports.com/r/IaC/m/190932>. Thanks to ldboeuf for continuing with this.

In other news, as of the 19th April, our updated devices webpage is up and running at <https://ubports.com/r/rE9/m/190932>. Capsia will also shortly be opening a forum thread with images of the proposed new website for you to look at and discuss.

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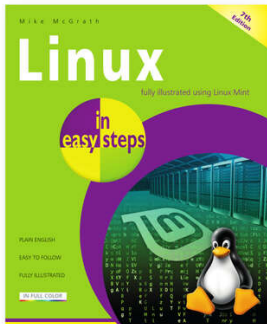


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My Opinion: Meshtastic

Written by Ronnie Tucker

I came across Meshtastic purely through a suggestion from YouTube's algorithms since I'd previously looked up radio stuff in the past. The idea behind Meshtastic is to send text messages from device to device through radio waves, but rather than just going point-to-point, you can route through other nodes (aka: devices) to reach your destination. This means you can reach devices much further away than your device's antenna is capable of. You can go from point A to point B via F and Q, if need be.

Most of the devices require a mobile phone with the Meshtastic app, but you need only Bluetooth enabled to send the message from the phone to the device. The message is then sent from the device. You can have no SIM card and wifi off on the phone, and it'll still work. Remember: the message is going via radio. The phone is not sending the message. There is at least one device (the T-deck) that has a built-in keyboard and is completely standalone.

Meshtastic is, of course, free and open source: <https://meshtastic.org/>

Devices

There are many devices that can run Meshtastic. The most well known is the Heltec V3. This can be bought pretty cheaply (~£20, sometimes £30 for two) from many Chinese suppliers with some supplying a small primitive antenna and case, but you could 3D print your own case. The files are out there for free. Just bear in mind that you need to supply power either through the USB-C socket on the device, or plug in a suitable battery.

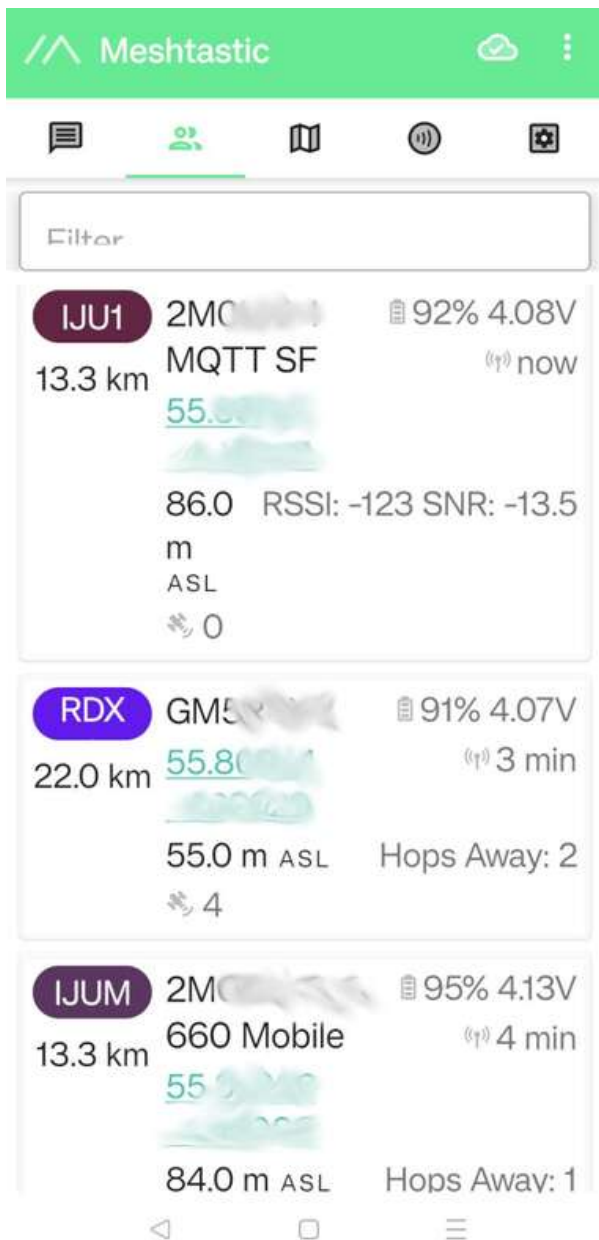
NOTE: these devices come in 433 and 868 flavors. Most users in Europe and the UK are using 868, and the 433 is for the US.

But, in theory, you can use anyone anywhere, but a 433 can't connect to a 868. Just be wary of which version you're buying.



Flashing

In the case of the Heltec, it comes with some basic software installed, but this needs to be replaced by Meshtastic. This is pretty simple since the Meshtastic site does most of the hard work for you. Using a modern browser you go to <https://flasher.meshtastic.org/> and go through the three steps. Make sure you're using a good quality, data compatible, USB cable. Not all USB cables can do data. Some are just for charging. Now you need to install the app on your phone.



With the app running, you link it to the device using Bluetooth. Hopefully, you'll now see other people nearby. Now, this is the potential downside of Meshtastic: you might have no one else

in your area who uses it.

There are a couple of online maps where people display their approximate location to allow others to see if there's anyone around (<https://meshmap.net/>). You don't have to appear on the maps.



I bought two devices and would leave one running at home while taking one with me to work and keep messaging my home unit to see what kind of distance I could get. Initially I was getting, at most, about 1km. Which is actually pretty good considering the placement of my home unit and the area I was testing in.

It's definitely better to get your device as high as you can get it, and leave it running 24/7 as it'll discover more devices in the area. My first setup was a tupperware container with the Heltec hooked to a USB battery pack. And it worked very well all things considered.

Antennas

If you want to reach further afield then you'll need to use a good external antenna. I bought an 868 compatible yagi from Amazon and mounted it on my roof with V2 of my tupperware box now containing the connection to an external antenna and a larger USB battery pack that lasts for a good 5 or 6 days. For my other Heltec (that I take with me) and my T-deck, I bought

a case that came with a battery pack and antenna from eBay.

Testing

With the new external antenna in place I started testing. I mounted the Heltec in its new case to the handlebars of my bike and peddled around sending messages to myself.

To my amazement I could easily message my home device from about a mile and a half away! And this is in the middle of the city. Only on one road which was heavily lined with trees did I get any issues in sending a message.

Conclusion

I'm still testing my devices. I'm hoping to go further afield during the nice weather and test the range to find my absolute limit. But even that changes as more and more nodes appear to extend the range. Remember, the more nodes online, the bigger the mesh gets and the more range everyone in that area gets.

So what's the point of this? Well, imagine if you're in a city where you experience power outages or natural disasters? Your power is out, maybe the cell towers are down (or overloaded), and you've no internet. How do you message people? Meshtastic. Gift some to your friends or relatives. As long as your area has enough people running a device(s), then, if nothing else, you might be able to even message a stranger to ask for assistance.

Of course, I'm not saying you should rely on these things. As if it all goes south the people running some devices might be a bit too busy to help route your messages or reply, but they're definitely better than relying on the cell towers and internet if it all went pear-shaped.



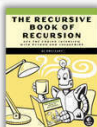
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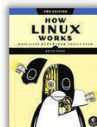
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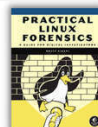
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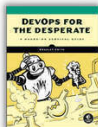
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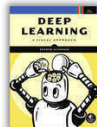
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HowTo: Write For Full Circle Magazine

Written by Ronnie Tucker

Guidelines

The single rule for an article is that it must somehow be linked to Ubuntu or one of its many derivatives—Kubuntu, Xubuntu, Lubuntu, etc.

The Official Full Circle Style Guide can be read at: <http://bit.ly/fcmwriting>

Please read this document before submitting an article. Follow the guidelines and you will have a much better chance of seeing your article in Full Circle.

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There is no word limit for articles, but be advised that long articles may be split across several issues. In your article, please indicate where you would like a particular image to be. Please do not use any formatting in your document.

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Review: Ubuntu 24.04 LTS

Written by Adam Hunt

Every two years, there's a day that is something like Christmas for Ubuntu users, and 25 April, 2024 was that day. That was the release date for the new Ubuntu long term support (LTS) version, Ubuntu 24.04 LTS. This is a big deal because most Ubuntu users don't use the three interim releases in between LTS versions, opting for the more polished LTS with its longer support period.



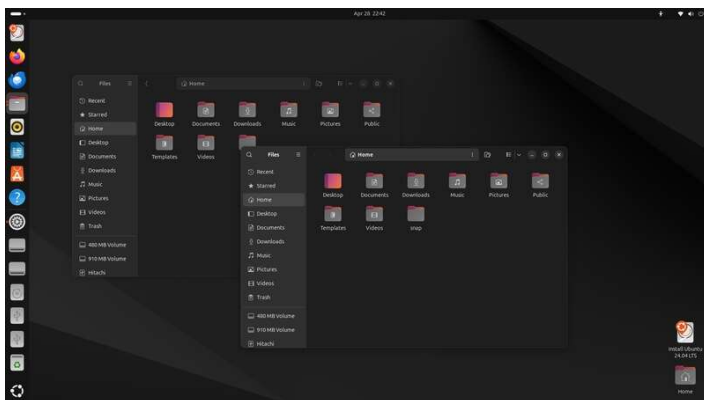
Ubuntu 24.04 LTS default desktop

Ubuntu 24.04 LTS is the 40th release of Ubuntu and the 14th with its modified GNOME 3 desktop. While the interim releases of Ubuntu are supported for only nine months, this LTS comes with five years of support. In addition, there are five additional years of support available through Ubuntu Pro, and enterprise users can also buy two further years of support, meaning you could still be running Ubuntu 24.04 LTS in 2036!

While the first two releases in this development cycle brought only a few small changes, the last interim release, 23.10, and this LTS, introduced a lot more. The changes are mostly behind-the-scenes, hidden from the average user.

Because Ubuntu 24.04 LTS is codenamed Noble Numbat, the obvious question is “what on earth is a numbat?” It turns out that it is a bug-eating Australian marsupial. And, no, it does not have wings; it is not that sort of bat. Numbats show up on the official release wallpaper, as a decorative element on a noble crown and are also featured on two more of the 13 provided wallpapers.

Ubuntu 24.04 LTS is actually the second Ubuntu release to carry a codename beginning with “N”, the earlier one being Ubuntu 11.04, Natty Narwhal, from April 2011. Because there are 26 letters in the English alphabet and there are two Ubuntu releases per calendar year, the letters naturally recur every 13 years.



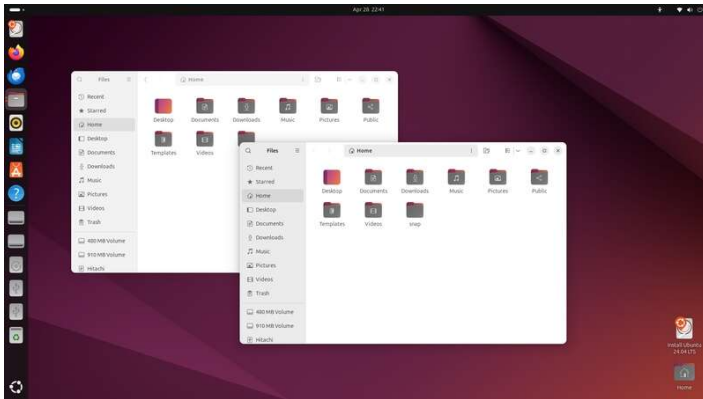
Ubuntu 24.04 LTS Nautilus 46.0 dark theme

Installation

I got my copy of the Ubuntu 24.04 LTS ISO file from the official source via BitTorrent, using Transmission to download it. Once the file had arrived, I carried out an SHA256 sum check on it to make sure the download was good.

The official release notes claim that there has been "a 200MB reduction in image size", but that does not fit the facts. In this case, the Ubuntu 24.04 LTS ISO file I got was 6.1 GB, making it 17% bigger than the Ubuntu 23.10 ISO file, which was 5.2 GB. Ubuntu has now more than doubled its ISO file size in the two

and a half years since Ubuntu 21.10 came out. That release was 2.9 GB. It is not really clear where all this extra bloat has come from.



Ubuntu 24.04 LTS Nautilus 46.0 light theme

I tested this release using Ventoy 1.0.97. Ubuntu is officially listed as being supported by Ventoy and it booted up nicely.

Anyone running Ubuntu 23.10 should have received a notice for an upgrade via the Software Updater shortly after the release date. Users with Ubuntu 22.04 LTS will get an upgrade notice only after the 24.04.1 point release is out, currently expected on 15 August, 2024. Those users can force an upgrade from the command line sooner, but just know that that method will not be fully tested before 24.04.1 is out, so there are risks involved. Of course, you can always just do a fresh installation of 24.04 LTS at any time.



Ubuntu 24.04 LTS default dark wallpaper

System requirements

The recommended minimum system requirements for Ubuntu 24.04 LTS have not changed in the last four years since 20.04 LTS came out and remain:

- *2 GHz dual core processor*
- *4 GB RAM*
- *25 GB of hard-drive, USB stick, memory card or external drive space*
- *Screen capable of 1024 × 768 pixel screen resolution*
- *Either a CD/DVD drive or a USB port for the installation media*
- *Internet access useful but not essential*

This means that Ubuntu 24.04 LTS should run fine on hardware designed for Windows 7 or later, although I would suggest at least 8 GB of RAM as a working minimum.

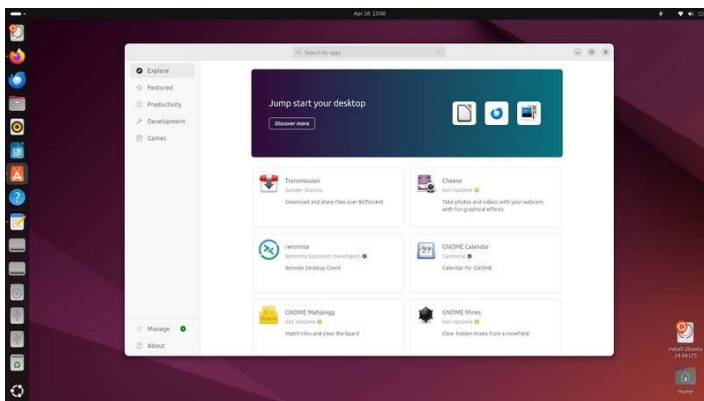
New

As I noted, there are a few new things that desktop users will notice and many more hidden updates behind-the-scenes.

Noticeable will be the introduction of the GNOME 46.0 desktop which includes updated application versions, many of which

now use libadwaita and GTK4. Not all the included GNOME applications are from version 46, though.

For fresh installations, the Ubuntu installer has been improved including reintroducing the option of using a ZFS file system, as well as TPM full-disk encryption. The Power Profiles Manager has been improved to better support newer hardware and is now "battery-aware", automatically increasing the optimization levels when running on battery power. For devices with fingerprint capabilities, fprintd has been updated and libfprint supports many new fingerprint drivers and devices. There is also a new version of the Flutter-based Ubuntu App Center introduced in Ubuntu 23.10 and which replaced the old Snap Store.



Ubuntu 24.04 LTS Ubuntu App Center

Also, for a webcam application, GNOME Snapshot replaces Cheese which had been included in Ubuntu for many years.

The Ubuntu family of fonts, which are used by default across Ubuntu as its system fonts, have been updated and are now slimmer and sharper. If you don't like them, there is a procedure to revert to the old versions outlined in the 24.04 release notes.

Ubuntu now supports the HEIF and HEIC photo formats commonly used on cell phones, plus games will run better due to an increase in the virtual memory mapping limit. Ironically,

to save space, Ubuntu now no longer comes with any games so you will have to install your own from the repositories.

There are also many behind-the-scenes changes that most desktop users will probably not notice, including the resolution of the famous Y2K Mark II bug, the “year 2038 problem”. When nothing happens in 2038, that will be it!



Ubuntu 24.04 LTS Quick Settings menu

There are many toolchain updates: binutils 2.42, BlueZ 5.72, Cairo 1.18, GCC 14, glibc 2.39, Golang 1.22, LLVM 18, .NET 8, Netplan v1.0, NetworkManager 1.46, and OpenJDK 21 is the now the default while support includes versions 17, 11 and 8. Also updated are Poppler 24.02, Python 3.12, xdg-desktop-portal 1.18, and Rust 1.75. Audio is now provided by Pipewire 1.0.4.

The initialization system is updated to systemd v255.4. Systemd is also now enabled by default for all uses, even when an instance is launched directly from a terminal window with the wsl.exe command or from an imported root files system.

This time around, the Linux kernel is version 6.8 which includes better support for Intel Meteor Lake CPUs, support for Nintendo Switch Online controllers, fixes the wifi issues seen on some AMD laptops, and improves the behavior of zswap. It also has improved syscall performance, nested KVM support on ppc64el, and access to the new bcachefs filesystem.

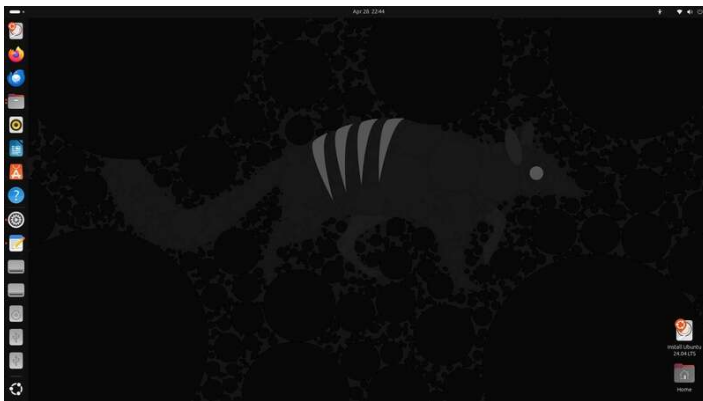
Apport now has integration with systemd-coredump to handle crashes.

For security, in combination with the apparmor package, the Ubuntu kernel now restricts the use of unprivileged user namespaces. TLS 1.0, 1.1 and DTLS 1.0 are now considered obsolete and have been disabled. There is more consistent application of openssl and gnutls system configurations and pptpd has been removed. Openssh in Ubuntu no longer uses libsystemd, due to the infamous XZ-utils backdoor.

GCC compiler 20 and dpkg now default to -D_FORTIFY_SOURCE=3 instead of -D_FORTIFY_SOURCE=2 to increase buffer overflow detection and mitigation. Dpkg now defaults to -mbranch-protection=standard – which should mitigate code-reuse attacks on the arm64 architecture.

The tzdata (time zone data) package was split into tzdata, tzdata-icu, and tzdata-legacy.

Many more similar sorts of small changes are also incorporated.



Ubuntu 24.04 LTS alternate dark Numbat wallpaper

For the average desktop user, most of these changes are positive updates, if largely invisible, with one possible exception. Due to a bug, the Ubuntu app-center will not install randomly downloaded .deb files, and this has generated loud complaints from some people in the tech media. These files can

still be installed using gdebi graphically, or from the command line, as long as they comply with the changes incorporated in the unprivileged user namespaces security upgrade. Many of these sorts of download applications, like the proprietary Zoom video conferencing client for Linux for instance, are already available as snap packages so do check there first before complaining.

Settings

As in recent releases, Ubuntu 24.04 LTS has only two window themes: standard (light) and dark. With the default wallpaper in use, switching to the dark window theme also switches the wallpaper to a dark version. Overall, that makes the display so dark it is hard to discern the edges of the windows in use. It is like your Ubuntu desktop fell into a black hole. A lighter-colored wallpaper actually works better with the dark window theme.



Ubuntu 24.04 LTS Firefox

Applications

As with Ubuntu 23.10, the 24.04 LTS ISO file boots up to a live session using the extended selection installation and not the minimal default installation. This, once again, means that the full suite of applications is present in the ISO but does not install under the default installation. As I noted last time, this means you still get a huge ISO file download for a minimal

installation, which seems like a bad compromise. Some other Ubuntu flavors, like Xubuntu, have separate ISO downloads for its regular and minimal installations, which seems like a more sensible solution.

Some of the applications included with 24.04 LTS extended selection installation are:

- *Archive Manager (file-roller) 44.1 file archiver*
- *Deja Dup 45.2 file back-ups*
- *Firefox 125.0.2 web browser***
- *GNOME Calendar 46.0 desktop calendar*
- *GNOME Clocks 46.0 clocks*
- *GNOME Disks 46.0 disk manager*
- *GNOME Document Scanner (simple-scan) 46.0 optical scanner*
- *GNOME Document Viewer (evince) 46.0 PDF viewer*
- *GNOME Files (nautilus) 46.0 file manager*
- *GNOME Image Viewer (Eye of Gnome) 45.3 image viewer*
- *GNOME Snapshot 46.2 webcam application*
- *GNOME Terminal 3.52.0 terminal emulator*
- *GNOME Text Editor 46.1 text editor*
- *GNOME Videos (totem) 43.0 movie player**
- *Gparted 1.5.0 partition editor****
- *LibreOffice 24.2.2 office suite, less LibreOffice Base*
- *PipeWire 1.0.4 audio controller*
- *Remmina 1.4.35 remote desktop client*
- *Rhythmbox 3.4.7 music player**
- *Shotwell 0.32.6 photo manager*
- *Startup Disk Creator 0.3.17 (usb-creator-gtk) USB ISO writer**
- *Systemd 255.4 init system*
- *Thunderbird 115.10.1 email client***
- *Transmission 4.0.5 bittorrent client*
- *Ubuntu App Center 1.0.0 package management system***
- *Wget 1.21.4 command line webpage downloader*

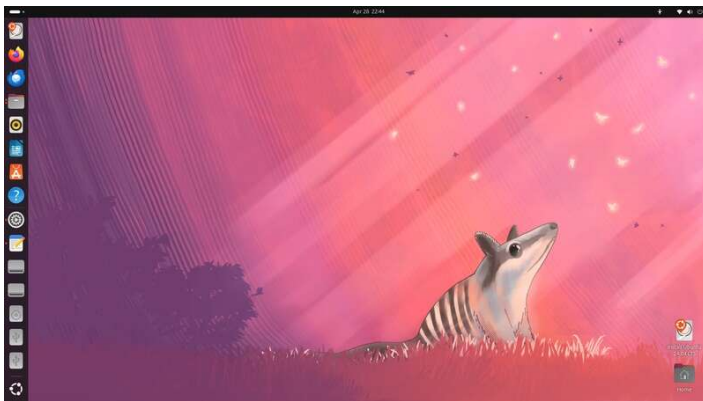
* indicates same application version used in Ubuntu 23.10

** supplied as a snap so version depends on the upstream package manager

*** indicates included on the ISO for boot-up but not included in a full installation

If you install the new default minimal installation, you will get Firefox, Nautilus, GNOME Text Editor, and not much more, although any desired applications can easily be added from the repositories using the Ubuntu App Center or the command line.

This time, the application collection is a mix of GNOME versions, mostly from GNOME 46, but with a few GNOME 43 and 44 holdovers. As mentioned above, the swapping of Gnome Snapshot for the old Cheese webcam application is the only change to the suite of default applications.



Ubuntu 24.04 LTS alternate Numbat wallpaper

As in the past, the default email client remains Mozilla Thunderbird, but it is now included as a snap package instead of a .deb, making support easier for Mozilla and providing more timely updates. I am sure there will be complaints.

While the App Center replaced the old Snap Store starting with Ubuntu 23.10, it took me some digging to figure out how it was installed. It turns out that it is a snap package but, even though it is developed with the package name of app-center, it is installed as snap-store, the same name used by the old package.

While it is a bit confusing, at least the mystery has been solved.

The GNOME Files 46.0 (Nautilus) file manager has some fixes. The file transfer dialogues are moved to the bottom left of the window and no longer obscure the tabs, a definite improvement. It also has new file search capabilities, the path box can now be edited, custom folders can be more easily reset and there is a new option to both display file and folder timestamps.

Conclusions

Overall, Ubuntu 24.04 LTS seems like a good, solid release. These days the emphasis at Canonical is on enterprise or business use, so Ubuntu 24.04 LTS looks like a polished and professional operating system that would be at home in a corporate HQ or a doctor's office. I am sure that its clean and serious look adds to its user appeal these days. If you want an operating system that barks when you boot it up then try Puppy Linux instead.

The next release will be Ubuntu 24.10, codenamed Oracular Oriole, expected in October, 2024. This will be the first interim release in the new development cycle that will lead to the next LTS, which will be Ubuntu 26.04 LTS, due out in April, 2026.

It is interesting to note that when Ubuntu 24.10 comes out that it will mark 20 years of Ubuntu. The very first release was Ubuntu 4.10, Warty Warthog, on 20 October, 2004. Ubuntu has shown some serious staying power over the past two decades!

External links

Official website: <https://ubuntu.com/>

Adam Hunt started using Ubuntu in 2007 and has used Lubuntu since 2010. He lives in Ottawa, Ontario, Canada in a house with no Windows.

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Review: Damn Small Linux 2024 alpha

Written by Adam Hunt

In the Linux world, you might be forgiven for being convinced that the dead can rise and walk again. In early 2024, an old Linux distribution, thought to have been dead and buried for 16 years, was resurrected!

With its last stable release in 2008, Damn Small Linux (DSL) is back, but with much that is new.



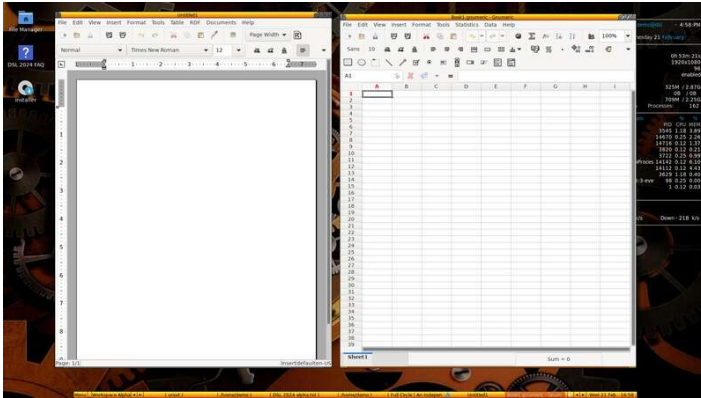
Damn Small Linux 2024 Alpha 1 default desktop

Background

DSL was started by American developer, John Andrews, and had its first stable release in 2005. His initial aim was experimental in nature: to see if he could create a distribution that would fit on a bootable business card, a once popular cut-down CD, the size of an actual business card and which held 50 MB of data. Yes, that resulted in a Linux distribution with a maximum size of 50 MB, and that was actually possible twenty years ago. DSL was designed to be booted up and run from a

variety of small media and was based on Knoppix, another distribution designed for “live CD” use. Knoppix was in turn based on Debian.

The DSL project gained a following and continued until its last stable release in 2008, when it disappeared into the annals of Linux history, or so we all thought.



Damn Small Linux 2024 Alpha 1 AbiWord and Gnumeric

And then, on 1 February, 2024, Andrews released a new DSL version called DSL 2024 alpha with the intention of creating a new stable version this year.

This DSL 2024 is not your grandfather’s DSL, however. Much has changed, in fact, and it may not have a lot in common with the original beyond its name.

Recognizing that it is pretty much impossible to create a useful distribution under 50 MB today, at least with any sort of graphical interface, the new size limit is 700 MB, which is 14 times bigger than the last version of DSL. This new 700 MB limit is intended to allow it to fit on a standard compact disc (CD). Remember those?

Is 700 MB a “Damn Small Linux”? Perhaps it is more like a “Somewhat Small Linux”. Well, at least we can note that it is less than 1/7 the size of Ubuntu 23.10, which weighed in at a hefty 5.2 GB at release time.

This new DSL version is no longer Knoppix-based but, instead, is now a derivative of antiX, which is a lightweight Debian-based Linux distribution.

DSL has also only been released in a 32-bit build, although it is worth noting that 32-bit software can be run on 64-bit hardware (but not the other way around).



Damn Small Linux 2024 Alpha 1 BadWolf and Full Circle

The other thing that has changed is the aim, as DSL is now intended to be a distribution run on hardware as old as that built for Windows XP, from about 2001-2008. Those boxes often came with 256 or 512 MB of RAM, which seems a bit quaint today when 8 GB is a normal bare minimum. Many of these computers also came with CD-only drives, but not DVD drives or the capability to boot from a USB stick (well, without using Plop that is), hence the 700 MB CD maximum size. But, do people still have blank CDs lying around? I know that I don't.

To get this new DSL down below 700 MB, Andrews limited the installed default languages to a few varieties of English, stripped out user manual pages, source code, and used lightweight applications that have a minimum of dependencies. DSL 2024 employs Debian's Advanced Package Tool (APT) to manage packages from the command line and that means that it is easy to run updates, install additional languages and applications as needed.

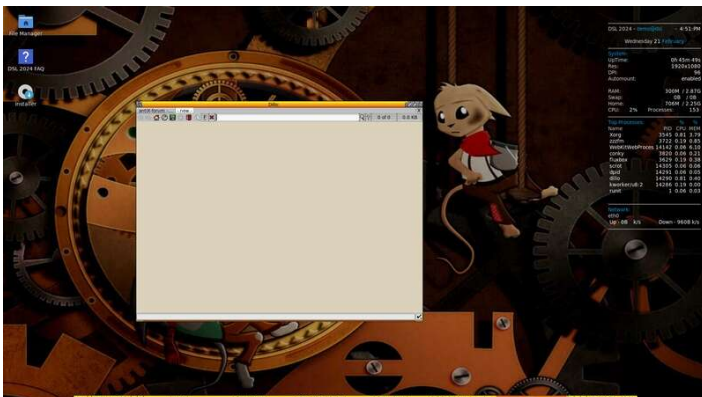


Damn Small Linux 2024 Alpha 1 BlueDay large theme menu

Getting DSL

I downloaded DSL 2024 alpha from the official website via HTTPS, since there is no BitTorrent available. As advertised, the file is under 700 MB, but not by much, as the version I got was 698.1 MB.

An MD5 sum is provided. While not as secure as an SHA256 sum, it did indicate that the download was good.



Damn Small Linux 2024 Alpha 1 Dillo 3.0.5

Installing

I ran DSL from a USB stick equipped with Ventoy 1.0.97. It is

not officially listed as being supported, but antiX is supported and DSL 2024 booted up just fine.

System requirements

DSL 2024 does not list any specific minimum system requirements, but I found it idled at 182 MB of RAM and with some applications open, including the file manager, text editor, word processor, spreadsheet, and terminal window, it never got above 325 MB so it should do fine with 512 MB of RAM, unless you are doing multiple-tab web browsing. Modern web pages tend to be big, so the sky's the limit there.



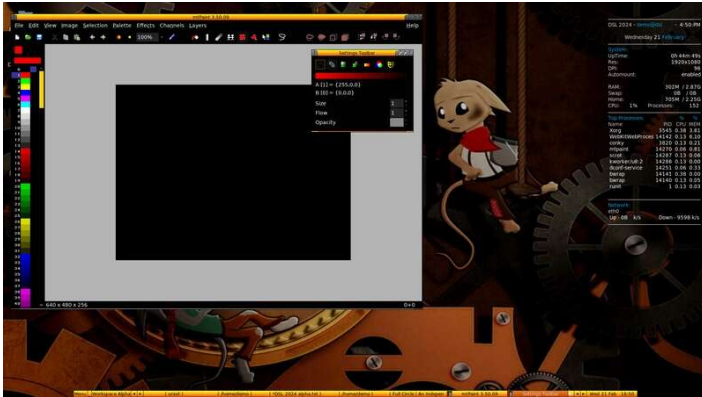
Damn Small Linux 2024 Alpha 1 gFTP 2.9.1b

Trying out DSL

I generally avoid reviewing Linux distributions that are not out as stable releases, as there tends to be a lot broken, and that is indeed the case with this first alpha of DSL 2024. I made an exception for DSL 2024 alpha, just because this project to create a new version after so many years was intriguing and I thought it deserved a review.

Normally in a development process you can expect a couple of alpha releases, then a beta, and finally the stable version, and, over that time, problems get identified and fixed, ideally resulting in a flawless stable version.

So with those low expectations, I had a look at DSL 2024 alpha. It boots up with the Fluxbox window manager, which forms the underlying basis for the desktop. The first impression DSL 2024 gives is that it is quite functional and comes with a collection of applications that will fit most basic desktop users' needs. Everything supplied is lightweight, which generally means minimally featured, though.



Damn Small Linux 2024 Alpha 1 mtPaint 3.50.09

The quite-conventional menu system can be accessed via the taskbar button or by right clicking anywhere on the desktop, a nice feature that saves time.

Systemd haters will be pleased to know that DSL uses runit as its initialization system.

Once booted up, I used APT from the command line to update DSL 2024 and had a look at the repositories, which are from antiX. If doing command line package management is not your thing, then it is easy to install Synaptic or another graphical package manager, although you will have to use the command line to install it! The lack of a graphical package manager does mean that this is not really a distribution for Linux beginners, as at least some command line APT skills are required.

In my initial checks, I found a number of elements that were broken, which is not surprising in a first alpha release. On that list was my WiFi card, which was not found, necessitating the

[illegible]

Settings

DSL 2024 uses Fluxbox as its default window manager,

The desktop wallpaper could not be changed, which is too bad



Damn Small Linux 2024 Alpha 1 with menu

Applications

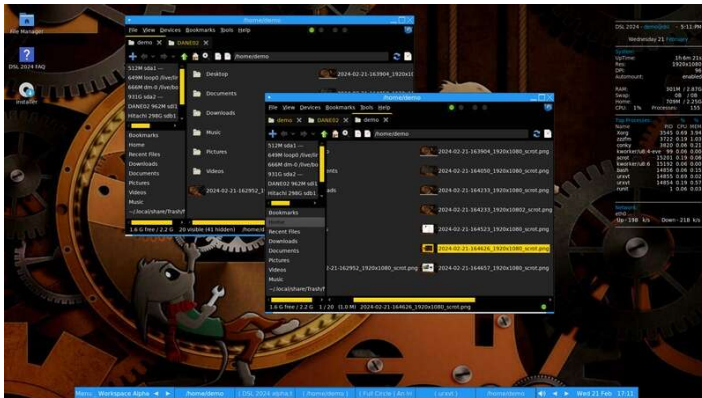
Some of the applications included are:

- *Abiword 3.0.5 word processor*
- *AlsaMixer 1.2.8 sound controller*
- *Archive Manager (File Roller) 43.0 file archiver*
- *Badwolf 1.0.3 web browser*
- *Dillo 3.0.5 web browser*
- *Feh 3.10 image viewer*
- *gFTP 2.9.1b FTP client*
- *Gnumeric 1.12.55 spreadsheet*
- *Leafpad 0.8.18.1 text editor*
- *MPV 0.35.1 video player*
- *mtPaint 3.50.09 image editor*
- *scrot 1.8.1 command line screenshot tool*
- *Sylpheed 3.8.0 beta 1 email client*
- *XMMS 1.2.11 audio player*
- *Zathura 0.5.2 PDF reader*
- *zzzFM 1.0.7 file manager*

As noted, this mix of applications consists of lightweight applications. More capable applications can be easily installed using APT from the repositories, although more RAM will be required to run them.

As a reviewer, one of the first things I looked for was to see if DSL had a screenshot tool installed. I didn't see one in the menus, but a check of APT showed that the command line scrot tool was installed. Scrot works well but it would have been nice if it had been provided with a key binding to the "PrtScr" key, as is normal. I was able to run it from the command line with a delay command to complete the screenshots for this review.

For a distribution that is trying to stay small, DSL has a curious number of duplicate default applications, including file managers, window managers and web browsers. That said, the BadWolf browser is slow to load pages and frequently crashes , while the Dillo web browser won't display many web pages, probably due to the lack of JavaScript support. Just a few more things that will need addressing before the stable release.



Damn Small Linux 2024 Alpha 1 zzzFM 1.0.7 BlueDay large theme

User base

One question that always comes up with niche distributions like this one is “who is this for?” The official website states that it is for “low-spec x86 computers ... to run on computers old enough to not have a DVD and cannot boot off of a USB drive.” So this is really aimed at people with old XP computers that they want to use as a main or secondary computer.

If you have more capable hardware you could still install DSL



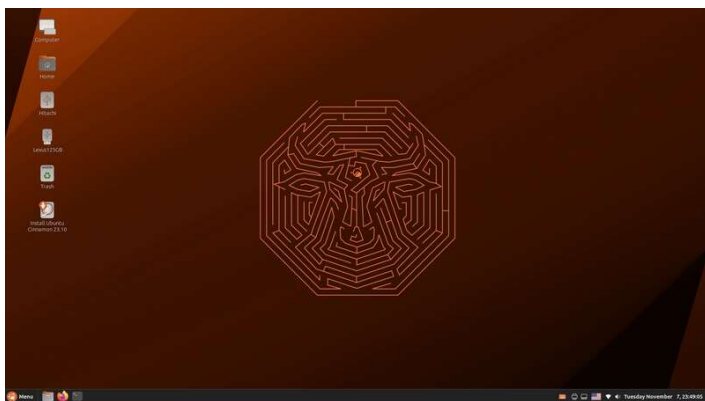
DSL 2024 alpha is truly an alpha release, as it has a number of things that don't work, at least so far, although it does show good potential.

One question remains: Is there enough pent-up demand by owners of old hardware that this will take off? While Damn Small Linux has some “brand recognition” at least among older Linux users, today the lightweight end of the Linux market already has a lot of players including Puppy Linux, SliTaz, Tiny Core Linux, and, of course, antiX. This newly reinvented DSL will have to offer something those others don’t to scratch out a dedicated user base.

Review: Ubuntu Cinnamon 23.10

Written by Adam Hunt

The last Full Circle review of Ubuntu Cinnamon was written about version 22.04 LTS by Erik and appeared in Full Circle issue 188. Since then, three more releases have come out, and I thought this would be a good time to have another look at this distribution, especially since it was just given official Ubuntu flavor status in early 2023.



Ubuntu Cinnamon 23.10 default desktop

Background

Ubuntu Cinnamon has an interesting history. Like quite a number of Linux desktops, the Cinnamon desktop traces its origins back to the GNOME 2 desktop and the initial wide dissatisfaction with its replacement, GNOME 3.

GNOME 2 first came out on 16 June, 2002 and quickly proved very popular among Linux users. It was a simple, three-menu desktop (Applications, Places and System) and was widely used across many distributions. It was the first Ubuntu desktop when

Ubuntu first appeared in the fall of 2004, as Ubuntu 4.10. As a simple, menu-driven desktop, GNOME 2 was an easy transition for defecting Windows users and made them feel at home fast.

GNOME 2 was so popular that its developers decided to do away with it and create GNOME 3, as a replacement, with the first official stable release in April, 2011. GNOME 3 was a totally different concept including a Mac-like launcher and no “maximize” buttons on application windows. Early versions of GNOME 3 were not great to use and, while a few users actually liked it, many hated it, including many developers. Linus Torvalds, creator of the Linux kernel, publicly called GNOME 3 a “total user experience design failure” and added, “I want my sane interfaces back. I have yet to meet anybody who likes the unholy mess that is gnome-3.” He personally stopped using GNOME and switched to Xfce.

The developer response to GNOME 3 was swift – they got to work across the Linux ecosystem with some better ideas.

Even before GNOME 3 was officially released, based on seeing early beta builds, the Ubuntu developers created a new interface called Unity which was first out on 9 June, 2010, ten months ahead of GNOME 3’s final official release. Unity is still around today and used as the default desktop on Ubuntu Unity. The mainstream Ubuntu distribution actually moved away from Unity to a modified version of GNOME 3 on 19 October, 2017 with the release of Ubuntu 17.10. This modified GNOME 3 was again an attempt to address its shortcomings without the costs of developing Unity.

In another parallel project, on 19 August, 2011, only four months after GNOME 3 came out, a fork of GNOME 2 became the MATE desktop, to be used in Ubuntu MATE starting in October, 2014.

Over at Linux Mint, where they had also been using GNOME 2 as their desktop, the developers tried a series of patches and extensions to tame GNOME 3, called the Mint GNOME Shell Extensions. These were not a great solution, though, and in January, 2012, Mint developer Gwendal Lebihan started

Project Cinnamon to produce, not a GNOME 2 fork, but a new replacement menu-driven desktop for GNOME applications. Mint did fork GNOME's window manager, Mutter, to become Muffin, and the GNOME file manager, Nautilus, to become Nemo, which brought back many deleted features from Nautilus. The Cinnamon desktop became fully independent from GNOME with version 2.0 in October, 2013 and it remains Mint's main desktop today, offered alongside MATE and Xfce.

Not long after the Mint developers created the Cinnamon desktop, there was interest in using it to build a dedicated Ubuntu variant. In 2012, Eric Kranich did just that and called this Ubuntu with Cinnamon "Cubuntu" with the first release 12.04. Cubuntu was controversial because it featured proprietary software including Google Chrome and Skype and also because, on initial installation, it was in French only, although that could be changed after installation. It also included a number of other desktops in the download file, selectable at boot-up. The last version was Cubuntu 16.04.3, out on 7 August, 2017, after which the project ended.

Joshua Peisach started a new Cinnamon effort in 2019, initially calling it Ubuntu Cinnamon Remix, with the first release 19.10, out on 4 December, 2019. The name was soon simplified to just Ubuntu Cinnamon. After seven releases had demonstrated that it had staying power, a team behind it and a solid user base, it became an official Ubuntu flavor on 28 March, 2023.

In this review we are looking at Ubuntu Cinnamon 23.10, which came out on 12 October, 2023. This is the ninth overall release and its second as an official flavor. As an interim release, 23.10 is supported for nine months, until July, 2024. The next release will be a long term support version, Ubuntu Cinnamon 24.04 LTS, due on 25 April, 2024.

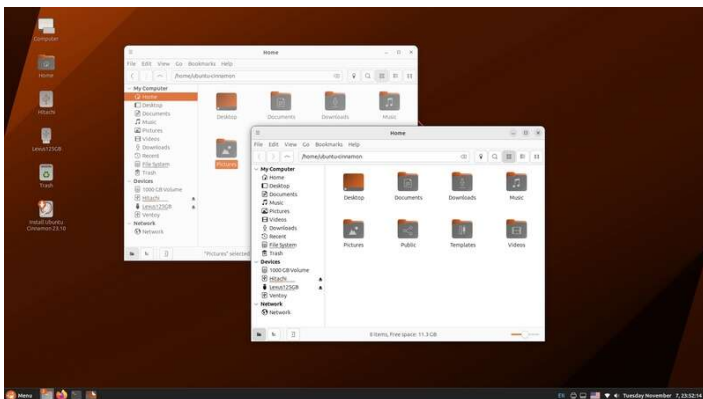


Ubuntu Cinnamon 23.10 Nemo Yaru-Cinnamon Dark theme

Installation

I downloaded the 4.1 GB ISO file for Ubuntu Cinnamon 23.10 from the official source by HTTP. I had tried to get it using BitTorrent but, almost four weeks after the official release date, there was no one left seeding the torrents. I did a command line SHA256 sum check on the file to confirm a good download.

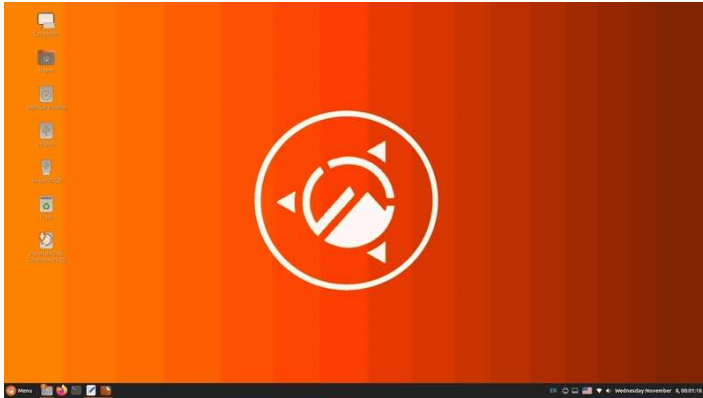
I ran Ubuntu Cinnamon 23.10 from a USB stick equipped with Ventoy 1.0.96. Ubuntu Cinnamon is not specifically listed as having been tested on Ventoy, but it worked fine.



Ubuntu Cinnamon 23.10 Nemo Yaru-Cinnamon theme

System requirements

Ubuntu Cinnamon does not list any minimum system requirements that I could locate but it is probably safe to assume that it is similar to mainstream Ubuntu which requires at least a 64-bit, 2 GHz dual-core processor and 4 GB of RAM. A faster processor and 8 GB of RAM would be better.



Ubuntu Cinnamon 23.10 alternate Cinnamon wallpaper

Trying out Ubuntu Cinnamon

On boot-up, Ubuntu Cinnamon 23.10 presents a very clean and simple desktop with a cinnamon-colored wallpaper, naturally. Being a mostly GNOME application-equipped desktop, the key to what makes Ubuntu Cinnamon unique is its menu and settings.

The Cinnamon menu is activated from a button on the bottom-left of the panel or with the “super” (Windows) key. The menu has a row of quick links down its left side, with icons for such things as Firefox, System Settings, Pidgin, GNOME Terminal, GNOME Files, screen locking, and shutdown. The main part of the menu on the right gives access by category: all applications, accessories, games, graphics, internet, office, sound and video, administration, preferences, places, and recent files. You can also search for applications by name or function. As is the case with Xubuntu, the menu can be resized by drawing it out with the mouse pointer, which is a very useful feature.

The section of the menu marked “preferences” gives access to the individual simple settings boxes that are also unique to Ubuntu Cinnamon. These can be accessed from the main menu individually or the System Settings box, which gathers them all together as a collection of tiles. Having each short list of settings as a single box is an interesting idea. It does make it pretty easy for users to find things, plus it makes the settings modular for the developers, which should be easier to maintain and to add new boxes.

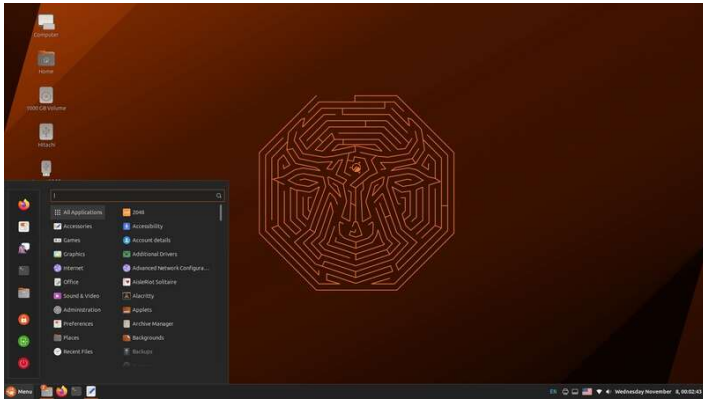


Ubuntu Cinnamon 23.10 alternate Joy wallaper

While very much a menu-driven desktop, Cinnamon is nothing like GNOME 2’s old three-menu solution. In fact, in many ways Cinnamon is better, very simple, easy to use, and will present no learning curve at all for transitioning Windows users. Plus it actually does make up for GNOME 3’s deficiencies, even in Ubuntu’s current, modified GNOME 3 desktop.

The panel is a Cinnamon feature, too. Fixed at the bottom of the screen, it is otherwise quite customizable including a wide range of height and icon sizes, plus it can be set to display all the time, hide unless the mouse pointer touches the bottom of the screen, or “smart hide” when a window touches it. Simple and effective.

All windows come with three control buttons, fixing another GNOME 3 issue.



Ubuntu Cinnamon 23.10 showing menu

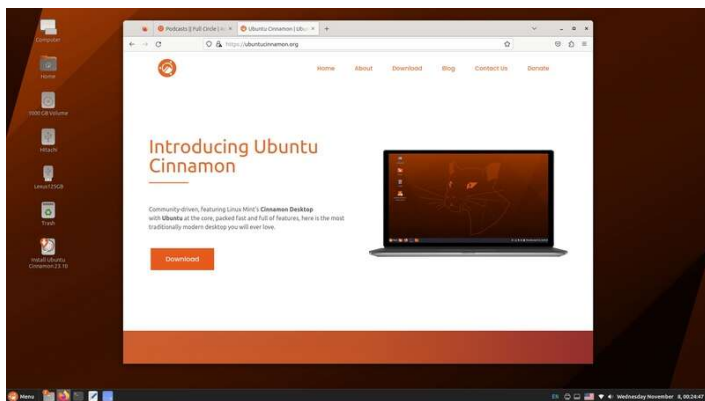
New

As a singular release, Ubuntu Cinnamon 23.10 does not bring a lot that is new over the last version, 23.04; just a few tweaks.

New in this release is Cinnamon 5.8.4 replacing version 5.6.7 used in the last release. This new version of the desktop supports mouse gestures using KDE's touchegg package, and also has some changes to the themes module allowing the creation of simplified themes.

One other small change is to the Plymouth Theme splash screen displayed text which now says “Ubuntu Cinnamon” instead of “ubuntucinnamon” plus the bottom of the text is not truncated.

Like the other Ubuntu 23.10 flavors, Ubuntu Cinnamon has Linux kernel version 6.5 with its new hardware support plus the usual collection of updated applications from the Ubuntu repositories.

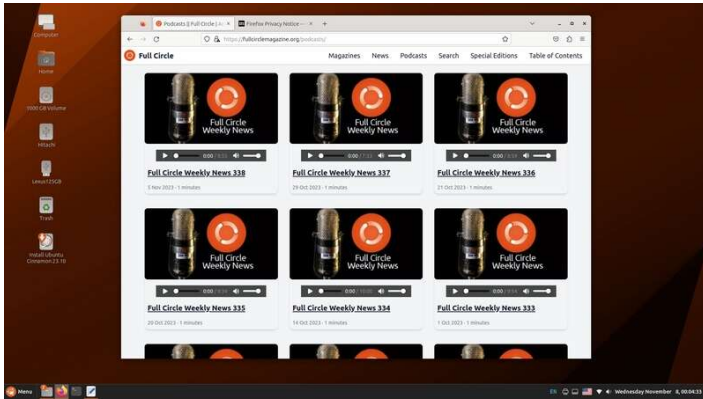


Ubuntu Cinnamon 23.10 with Firefox Ubuntu Cinnamon website

Settings

One way that Ubuntu Cinnamon differentiates itself from mainstream Ubuntu 23.10 is that it has a lot of user customization options. The range runs to three different mouse pointer themes, 35 window color themes, 32 icon themes, 29 desktop themes (which set the panel colors), and 37 wallpapers, which are organized into 22 categories! That wide range of choices puts it in the same class as Kubuntu and Ubuntu Unity. Lots of user choices usually translate to increased user dedication to a distribution.

The 23.10 default wallpaper includes the Ubuntu Minotaur and labyrinth motif rendered in the trademark dark brown cinnamon color. The rest of the wallpapers provided form an eclectic collection from a number of sources, including photo wallpapers from Ubuntu and even some from Debian with the Debian curl logo on them. The claim to Debian heritage is not totally out of line since Ubuntu Cinnamon derives from Ubuntu, which is itself a Debian derivative, so it is Debian's grandchild.



Ubuntu Cinnamon 23.10 with Firefox

Applications

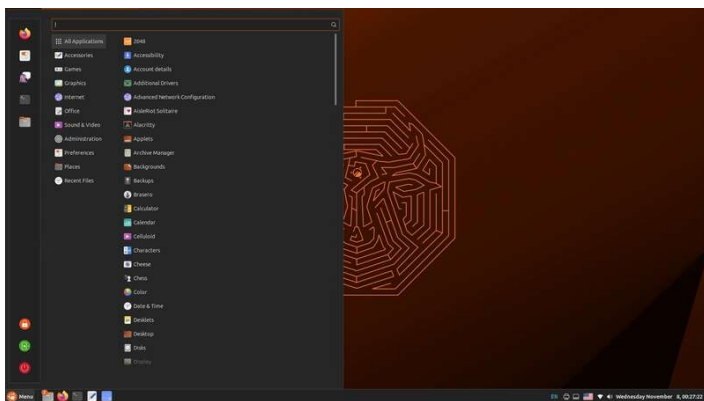
Some of the applications included with Ubuntu Cinnamon 23.10 are:

- *Alacritty 0.12.2 terminal emulator*
- *Archive Manager (File Roller) 43.0 archiver**
- *Brasero 3.12.3 CD/DVD burner**
- *Cheese 44.1 webcam*
- *Cinnamon 5.8.4 desktop environment*
- *CUPS 2.4.6 printing system*
- *Document Scanner (Simple Scan) 44.0 optical scanner**
- *Document Viewer 45.0 (Evince) PDF viewer*
- *Firefox 118.0.1 web browser***
- *Celluloid 0.25 video player*
- *GDebi 44.2 package installer*
- *GIMP 2.10.34 image editor**
- *GNOME Calendar 45.0 desktop calendar*
- *GNOME Disks 45.0 disk manager*
- *GNOME Photos 44.0 photo manager**
- *GNOME Software 45.0 package management system*
- *GNOME System Monitor 45.0.2 system resource monitor*
- *GNOME Terminal 3.49.92 terminal emulator*
- *GNOME Videos 43.0 (totem) video player**

- *GNote 44.1 note taking application*
- *Gparted 1.5.0 partition editor*
- *gThumb 3.12.2 image viewer**
- *Hexchat 2.16.1 IRC client**
- *Image Magick 6.9.11.60 command line image editor**
- *Image Viewer 45.0 (Eye of Gnome) image viewer*
- *LibreOffice 7.6.2 office suite*
- *Muffin 5.8.1 window manager*
- *Nemo 5.8.4 file manager*
- *Pidgin 2.14.12 IRC client**
- *Pipewire 0.3.79 audio controller*
- *Remmina 1.4.31 remote desktop client*
- *Rhythmbox 3.4.7 music player*
- *Sound Juicer 3.40.0 CD ripper*
- *Synaptic 0.91.3 package manager*
- *Text Editor (gedit) 44.2 text editor**
- *Thunderbird 115.3.1 email client*
- *Transmission 4.0.2 bittorrent client*

* indicates same application version as used in Ubuntu
 Cinnamon 23.04 ** supplied as a snap, so version depends on
 the upstream package manager

That list of default applications is quite long and includes just about anything a desktop user could want, except perhaps a video editor. There are some oddities on the list, though, like the Sound Juicer CD ripper and Brasero CD/DVD burner, which seem a bit archaic. There are also a lot of applications that duplicate other applications, like two terminal emulators, two image viewers, two image editors, two software package managers, and two video players. There are also 19 games included. If I was installing Ubuntu Cinnamon for daily use, I would probably have a long list of things to remove to make it lighter and its menus shorter. A good concept might be the creation of an Ubuntu Cinnamon "minimal installation" version with just the base desktop, like Ubuntu and Xubuntu offer, to save ISO file download size and user time in cleaning up after installation.



Ubuntu Cinnamon 23.10 with resized menu

Most of the default applications included are from the GNOME desktop or at least are common applications often found alongside GNOME, such as the Firefox web browser, Thunderbird email, and the Remmina remote desktop client.

Ubuntu Cinnamon uses the Cinnamon desktop's own Nemo file manager in place of the standard Gnome file manager, Nautilus. Nemo is actually an earlier fork of Nautilus with some of Nautilus' deleted features reinstated like the "up one level" button. It does not, however, have bulk file-renaming yet, so most users will need to add a bulk file-renamer, such as GPRename.

Conclusions

From my first time using it, I am pleased to report that Ubuntu Cinnamon is surprisingly good. It provides a very simple and elegant desktop that will be an easy transition for almost any user new to it, regardless of your last operating system.

I saw almost no drawbacks to Ubuntu Cinnamon 23.10 except, perhaps, its very long list of default applications with many functional duplications which may require some user paring down after installation, to reduce menu clutter.

The next release will be Ubuntu Cinnamon 24.04 LTS, a long term support version with three years of updates, out on 25

April, 2024.

External links

Official website: <https://ubuntucinnamon.org/>

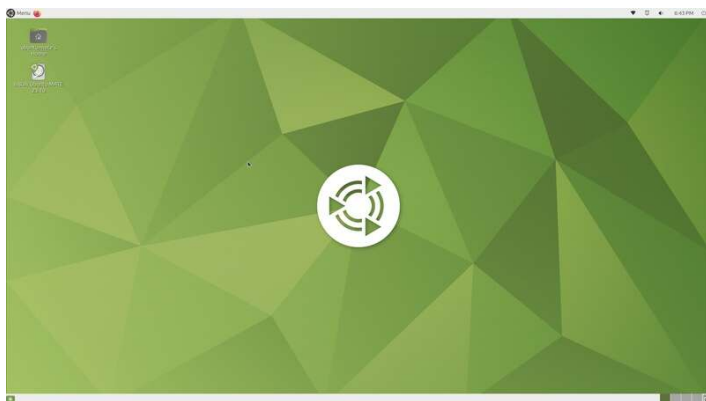
***Adam Hunt** started using Ubuntu in 2007 and has used Lubuntu since 2010. He lives in Ottawa, Ontario, Canada in a house with no Windows.*

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Review: Ubuntu MATE 23.10

Written by Adam Hunt

It has been quite a while since Full Circle carried a review of Ubuntu MATE. In fact, the last review was of the very first release, Ubuntu MATE 14.10, written by Michael Davies and published way back in Full Circle issue 93 in January 2015. Since Ubuntu MATE is now on its 20th release, I thought it was time to see how things are progressing for this Linux distribution.



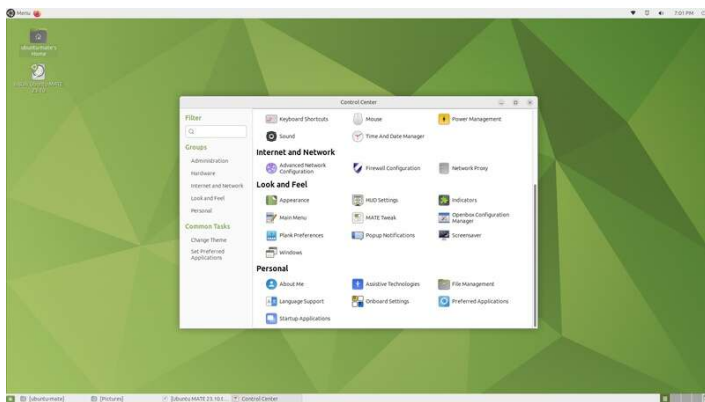
Ubuntu MATE 23.10 default desktop

The current version is Ubuntu MATE 23.10, which was released on 12 October, 2023. As an interim release, it is supported for just nine months, but the next version, 24.04, will be a long term support release, with three years of updates. It is expected out on 25 April, 2024 and supported until April, 2027.

Background

The MATE desktop got its start for the same reason that the Unity interface was created for Ubuntu and the Cinnamon

desktop for Linux Mint. That story goes back to 2011 and the GNOME desktop project's decision to ditch the highly successful and popular GNOME 2 desktop that had been introduced in 2002, and replace it with something completely new: GNOME 3. At its public release in April, 2011, it would be fair to say that GNOME 3 was not well received. A few people actually did like it but a lot didn't, including not just users, but developers too. Linux kernel founder, Linus Torvalds, personally switched from GNOME to Xfce at the time, calling GNOME 3 an “unholy mess”.



Ubuntu MATE 23.10 Control Center

Developers quickly started work on replacements like Unity and Cinnamon. That was a good move as LinuxQuestions surveys done before and after GNOME 3 came out showed how much its popularity slipped once people tried it out. In the earlier survey, GNOME 2 had been the number one Linux desktop with 45% use. Post release, GNOME 3 was at 19% and was number two, behind KDE.

While Unity and later Cinnamon became great alternatives, what about the idea of just resurrecting the abandoned GNOME 2, since it had been so popular? One developer from Argentina, Perberos, decided to do just that. He took the GNOME 2 code and forked it, naming his project MATE. His first release was on 19 August, 2011, only four months after GNOME 3 came out. By 8 November, 2013, MATE was available as a Debian desktop and by January, 2014, it was on Arch Linux as well.

All the main GNOME 2 components were forked and renamed, with most given Spanish names. The Nautilus file manager became Caja (Spanish for “box”), the Evince PDF reader became Atril (“lectern”) and the File Roller file archiver became Engrampa (“staple”). The Metacity window manager became Marco (“frame”), the gedit text editor became Pluma (“pen”) and so on.



Ubuntu MATE 23.10 alternate wallpaper

The desktop itself was named for a South American caffeine-laden herbal tea called mate. The tea is made from the yurbe mate plant (*Ilex paraguariensis*). It is properly pronounced “mah-tay” and not like the English word “mate”, a term that can mean “friend”, although that actually is a good fit for this user-friendly desktop!

The project writes MATE with all capital letters, even though it is not an acronym, just to make it fit in with some of the other desktop names, like GNOME, KDE and LXDE (but not LXQt, Xfce, Unity or Cinnamon). They later devised an English recursive “backronym” to retroactively explain the use of the capital letters: “MATE Advanced Traditional Environment”.

The MATE desktop started out as a direct clone of GNOME 2, including using its three menu system (Applications, Places and System), but it has developed carefully over time. Today, it has a simple single menu that is very intuitive and easy to use and, unlike the old GNOME 2 menus, includes an application search

box.



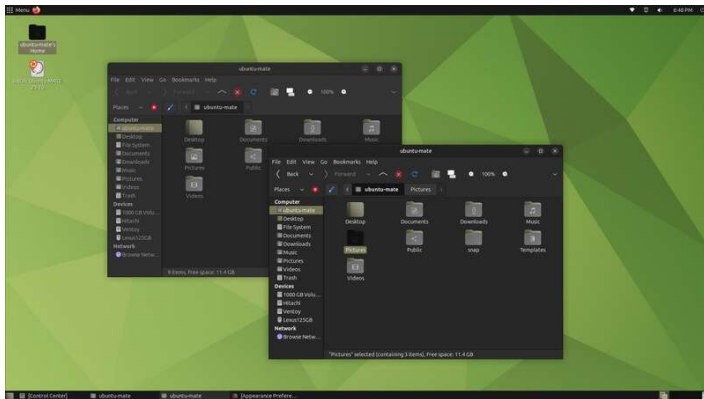
Ubuntu MATE 23.10 with AI generated wallpaper

With MATE out in August, 2011, two developers, Martin Wimpress and Alan Pope, decided to put the new desktop on the Ubuntu backend and the first release of Ubuntu MATE was made on 23 October, 2014, using Ubuntu 14.10 as a base. 19 days later, on 11 November, 2014, they put out a version based on the earlier Ubuntu 14.04 LTS to provide long term support. The very next release, Ubuntu MATE 15.04, came out with official Ubuntu flavor status. Today the distribution is still led by Wimpress and Pope and it has attracted a whole community of developers to spread the workload around. Wimpress is also involved in an effort to develop an improved MATE experience, one that is closer to Ubuntu MATE for Debian.

With 20 releases over the last ten years under its belt, Ubuntu MATE is a pretty mature distribution with a dedicated base of users. It has a rather paradoxical motto, “for a retrospective future”.

It is worth recalling that for its first six years of existence, mainstream Ubuntu used the GNOME 2 desktop, from Ubuntu 4.10 to 10.10. Starting with Ubuntu 11.04, it moved to the Unity interface to avoid GNOME 3. Unity on Ubuntu lasted six years, until Ubuntu 17.04, when it was dropped in favor of the modified GNOME 3 desktop which it continues with today. In fairness, GNOME 3 has improved over time and Unity lives on

as the interface for Ubuntu Unity.

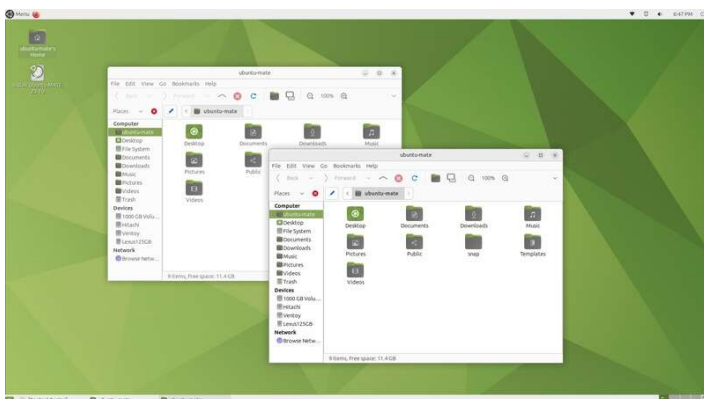


Ubuntu MATE 23.10 with Caja Yuru-bark-dark theme

Installation

It was more than a month after the official release date of 12 October, 2023, that I downloaded the 3.6 GB Ubuntu MATE 23.10 ISO file from the official website via HTTP, as the BitTorrents had been shut down. Once I had the file downloaded, I carried out an SHA256 sum check from the command line to confirm that it was an uncorrupted download.

I dropped the Ubuntu MATE 23.10 ISO file onto a USB stick, equipped with Ventoy 1.0.96, and booted it up. Ubuntu MATE is listed as officially supported by Ventoy and, as expected, it worked fine.



Ubuntu MATE 23.10 with Caja default Yaru MATE light theme

System requirements

The Ubuntu MATE website lists the minimum hardware as:

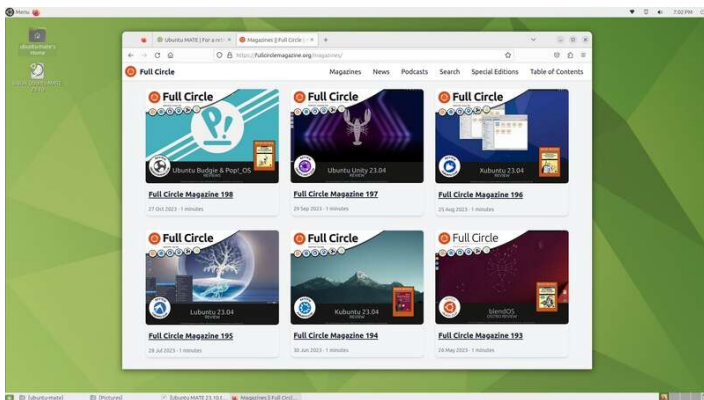
- *Dual core processor*
- *64-bit*
- *1 GB of RAM*
- *8 GB of disk space*
- *Display 1024 X 768 px*

The recommended hardware is:

- *Core i3 processor*
- *64-bit*
- *4 GB of RAM*
- *16 GB of disk space*
- *Display 1440 X 900 px, with graphics card*

Raspberry Pi B models are also supported including the Raspberry Pi 2, 3, 3+ and 4 (all memory sizes).

Ubuntu MATE is actually fairly lightweight compared to most other Ubuntu derivatives.



Ubuntu MATE 23.10 with Firefox Full Circle website

Trying out Ubuntu MATE

On boot up Ubuntu MATE 23.10 presents a simple desktop with two panels, one at the screen top and the other at the bottom, just like GNOME 2. The wallpaper and theme are green. It all looks very much like GNOME 2 with the exception of the menu.

The new menu is the key MATE feature, since this is where you launch applications and find the settings. The menu has categories for favorites, all applications, accessories, administration, graphics, internet, office, preferences, sound & video, system tools, universal access, and a quick link to the control center, which is where all the settings are found. The menu cannot be resized. Overall this menu system is very intuitive and will make MATE an easy transition for Windows users.

MATE is a rarity in having two panels, in an age where most desktops only have one. The bottom one can be right-clicked and deleted, but then you will have to rely on alt-tab to find minimized applications, plus lose your workspace switcher and “show desktop” button. Once closed, it can be reopened by right-clicking on the top panel and selecting “reset all panels”. Probably better to keep it.

MATE will feel very familiar to people who have used GNOME 2. For new users, its inherent simplicity and high discoverability makes it a quick study with a low learning curve. Almost anyone would feel at home here in a few minutes.



Ubuntu MATE 23.10 with Plank

New

As a single release, Ubuntu MATE 23.10 does not bring a lot of new features, mostly just a few fixes. This is as expected, since the project was started as a reaction to too much radical change in the first place. When you reach perfection, any changes will make it worse.

In this release, the desktop is now at version 1.26.2, which includes some bug fixes and minor improvements. The rest of the listed changes are all small and mostly “behind-the-scenes” items, which users are unlikely to notice.

This release continues the recent trend of including at least one artificial intelligence-generated wallpaper. For this release, codenamed “Mantic Minotaur”, the wallpaper was generated using Stable Diffusion XL by Simon Butcher – a friend of Wimpress who is the Head of Research Platforms at Queen Mary University in London. It is a rather striking image of a Minotaur in graphic novel style. It won’t be everyone’s preference for daily use, but it is an attention-getter.



Ubuntu MATE 23.10 with Software Boutique

Settings

Ubuntu MATE features a default green theme and that includes the default wallpaper for 23.10, which is a simple geometric design with the MATE logo. In total, 28 wallpaper designs are provided, including the aforementioned Minotaur wallpaper, so there are lots of choices. Furthermore, 23 window color themes are included. The MATE Control Center gathers all of the settings into one convenient place and makes finding your own look an easy and enjoyable task.

For users who like a dock on their desktop, MATE has the Plank desktop dock installed by default but not turned on. It can easily be activated by opening the Plank preferences dialogue box which also includes a plethora of settings. Plank is easy to turn off, too.



Ubuntu MATE 23.10 with menu

Applications

Some of the applications included with Ubuntu MATE 23.10 are:

- *Atril 1.26.0 PDF viewer**
- *Caja 1.26.1 file manager*
- *Celluloid 0.25 video player*
- *CUPS 2.4.6 printing system*
- *Document Scanner (Simple Scan) 44.0 optical scanner**
- *Engrampa 1.26.0 file archiver**
- *Evolution 3.50.0 email client*
- *Eye of MATE 1.26.0 image viewer**
- *Firefox 118.0.1 web browser***
- *GDebi 44.2 package installer*
- *GNOME Disks 45.0 disk manager*
- *Gparted 1.5.0 partition editor*
- *GFW 22.04.0 firewall controller*
- *MATE Calculator 1.26.0 calculator**
- *MATE Control Center 1.26.1 settings manager*
- *MATE Disk Usage Analyzer 1.26.1 (baobab) disk display*
- *MATE System Monitor 1.26.0 system resource monitor*
- *MATE Terminal 1.26.1 terminal emulator*
- *LibreOffice 7.6.2 office suite*

- *Pipewire 0.3.79 audio controller*
- *Plank 0.11.89 desktop dock**
- *Pluma 1.26.0 text editor**
- *Redshift 1.12 screen color temperature adjuster**
- *Rhythmbox 3.4.7 music player*
- *Shotwell 0.32.2 photo manager*
- *Software Boutique 0 + git.Ofdcecc software store***
- *Transmission 4.0.2 bittorrent client*
- *Webcamoid 9.1.1 webcam*

* indicates same application version as used in Ubuntu MATE 23.04

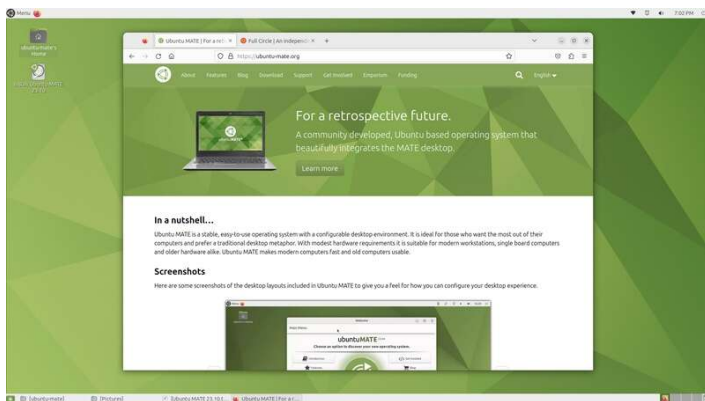
** supplied as a snap, so version depends on the upstream package manager

Many of the default applications included are MATE forks, originally from the GNOME desktop.

MATE has its own Caja file manager in place of the standard Gnome file manager, Nautilus. Caja is a fork of Nautilus with some of Nautilus' deleted features reinstated like the "up one level" button, plus it has bulk file-renaming which is a useful feature.

The Software Boutique store is unique to the Ubuntu MATE project. It was written as an improvement on GNOME Software and Ubuntu Software. It is included as a Snap package but originates from project github sources, not from the usual Ubuntu Snap Store, snapcraft.io.

The list of default applications provided is fairly complete, but not excessive, and, unlike Ubuntu Cinnamon, no functional duplicates are included. For most desktop users, there will not be many applications to add from the repositories, perhaps just a video editor.



Ubuntu MATE 23.10 with Firefox MATE website

Conclusions

If you liked the early GNOME 2 versions of Ubuntu, you will probably love Ubuntu MATE, as it is a worthy successor and overall very similar.

If you are new to Linux, particularly coming from Windows, and looking for a very simple, menu-driven desktop that you can master in a few minutes, then Ubuntu MATE may be your ticket to a fast home in the Linux world.

If you are the sort of user who is looking for fancy effects, bling and gimmicks, then I would suggest you walk right past Ubuntu MATE, because you will be quickly bored. This is a minimalist distribution that stays out of your way and lets you get work done. It is not fancy.

The next Ubuntu MATE release will be a long term support version, 24.04 LTS, with three years of support, due out on 25 April, 2024.

External links

Official website: <https://ubuntu-mate.org/>



***Adam Hunt** started using Ubuntu in 2007 and has used Lubuntu since 2010. He lives in Ottawa, Ontario, Canada in a house with no Windows.*

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Letters

Compiled by Ronnie Tucker

letters@fullcirclemagazine.org

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Q&A

Compiled by Erik The Unready

If you have a Linux question, email it to: misc@fullcirclemagazine.org, and Erik will answer them in a future issue. Please include as much information as you can about your query.

One of our 'new' employees at the company I work at, is 74 years old. Now, before anyone gets any ideas, he does something few people do. In other words, his skills are in demand, so he is able to work long after retirement age. (It also says a lot about age discrimination.) The only problem is that he is technologically challenged. Twenty four years ago, when he retired, computers were these big beige boxes that almost took up your whole desk. Obviously during one's retirement, you take cruise ships around the world, you muck about in your garden, and you generally do all the fun stuff you never had time for during your slave years. The thing most retired people do *not do, is keep up with technology. It has been 'challenging' preventing him from burning the building down. He will plug power into itself or plug multiple chargers into his

notebook and so forth. I looked in the mirror and found 100 new grey hairs after his first two days! I am truly thankful for transient voltage suppressors in modern notebooks and peripherals. Flinching at every noise, expecting the fire alarm is definitely not a good feeling. With that in mind, I refer to my friend's mom, who is now 78, who keeps up with her kids in Australia via Ubuntu Budgie. She had no clue when it came to windows 11, that came with her laptop that her son bought her, but with Ubuntu budgie and a few apps... sorted. She has her cozy mysteries playing in Musique, while she is crocheting, Thunderbird for email, and Skype and Jami for instant communication, so she does not really need a cellphone, and LibreOffice, not costing her a cent. Ubuntu Budgie has a simple layout that he added a dock for her with her favourite apps and she has not wanted it updated from 18.04 in fear of drastic changes – like you get with Windows. We will now load Ubuntu Budgie 24.04 in a virtual machine (in a month or two), and see if it is the same as 18.04, and make it look the same. Tell me again how Windoze is “winning”.

Q I have a HP M479 on my network. I used to be able to print, but not any more. If I print, no activity on the printer. There is a duplicate printer though? If I remove it a few seconds later it just comes back. I haven't needed to download drivers on Ubuntu 20.04 before. Do I need a different kernel, or just look for drivers?

A It happens sometimes, click the network icon, turn off networking and delete all the printers and reboot. Once in again, turn networking back on and search for the printer. Let it install fresh. Your issue should be solved.

Q Ubuntu 22.04, in qbittorrent, magnets, some of them are giving me problems; qbittorrent stays looking for metadata, although they have seeders. Sometimes new magnets stays @ thinking, and I'm not sure what is wrong. I did not have issues with older versions of qbittorrent that I can remember. Can it be Ubuntu?

A OK, this is not an Ubuntu problem, but an understanding problem. Magnets are not torrents, open a torrent file in your text editor, then open the magnet file in your text editor. They are not the same. Torrent files already contain metadata information that magnet files need to download first. See: https://www.youtube.com/watch?v=d7IX_yy15wI

Q New install, Ununtu 23,10. I have this issue while installing flathub. I used this command line. sudo apt install flathub
Reading package lists... Done Building dependency tree... Done
Reading state information... Done E: Unable to locate package flathub

A Have you considered Linux Assistant (<https://www.linux-assistant.org/>)? It will do just that for you. It was designed to help people get these things done quickly.

Q I tend to keep my Ubuntu installation quite clean and I clean up after each update. Sometimes I will find modules relating to Nvidia or the kernel. What would you suggest as a good cleaner? Beachbit has ruined a system for me before, so I am a bit wary.

A I can relate, I use Stacer, but, like anything, if you want something done right, you need to do it yourself. Because Ubuntu is based on Debian, it also keeps the config files, in case you want to install a deb-file again. As Nvidia drivers will update constantly, you may see a lot of files. Run: grep-status -n -sPackage -FStatus config-files – to see all the leftover configs. You can try Synaptic and look on the right for “Not installed(residential config)” and “completely remove” the lot.

Q Can I install Ubuntu on my Dell with a touch screen???

A Yes, and I can confirm it works, because I had to turn it off in the BIOS as it is annoying as hell.

Q My laptop is getting on in years and I have decided to abandon Gnome for XFCE. When I click on a panel and I go to properties, it shows transparent, but the panel is solid. I want to get some transparency in there, so it looks like my icons are floating.

A Erm, I think you should look at what the header says, I have a feeling it says "separator". You need to go to "panel" and its sub-menu to set the entire panel. Yes, I know, bad design, one of my peeves with XFCE.

Q I can't connect Ubuntu to the wifi. I have disabled IP v6 as suggested. My Ubuntu is still 20.04 and my connection information says; IP Address: 192.68.1.2, then Subnet mask 255.255.255.0, then default route 192.168.1.1, and primary DNS 127.0.0.1, and nothing in IPv6. Can you help me?

A I see two issues, one the IP address is missing a "1" in front of the "68" (as your gateway says "168"), and your DNS is the local machine, which is fine if you use another DNS, but try 1.1.1.1 or 8.8.8.8 to test. I bet it is one of those two things.

Q On my Ubuntu 20.04 laptop, the fans go crazy until I open up the system monitoring centre and go to processes, which seems to calm it right down again, but it is driving me crazy, I just can't seem to nail it down.

A Honestly, I have no idea, too little info, but I suggest getting an antivirus and intrusion detection system and see if anything is amiss. It sounds like something detecting that you are looking and scaling down. You could also always reinstall?

Q Suddenly I can't xrdp on to my VPS any more. I did not make any changes. What could be the issue? Ubuntu 18.04.

A Wow, you are going to have to give me more to go on!! I looked at the Debian CVE's and bugs for xrdp and there are a lot. It seems there is "unexpected behaviour" in four of them. It needs to update to 0.10

by the looks of things. Maybe look at something more stable?

Q I'm running the Ubuntu in a VM on my Mac. When I change my resolution to 3840x2160, everything starts freezing but it works fine at 1280x800? I think I need a driver, but I'm not sure what or how?

A Two things to check, by default, the Mac only allocates 16MB memory to VGA, make it 128MB (lots of pixels require lots of memory), and check if your guest additions CD is installed.

Q My Ubuntu 22.04 has not asked me to upgrade yet. When will that be? It has been out for almost 3 weeks already. I don't want to reinstall again.

A The upgrade prompts happen only when the distribution hits the next milestone, 24.04.1, and not sooner.

Q Here's the rub, on my Ubuntu 20.04, I have no issues running the game freecol. Now that I have 22.04, the game won't run. The twist is that I tested it on the pre-release and I had no issues. I have a Nvidia A2000 display, that is not gaming, but it used to work. What would have changed between November & May? :/

A It seems it is a bug, related to Java: <https://sourceforge.net/p/freecol/bugs/3357/>

Q I am running Ubuntu on a 2019 Macbook pro and I am really confused by my error. You see, when I remove my charger, the battery still shows charging. If I leave it on charge, it charges so slowly, I have to leave it overnight if I want a full charge in the morning. The laptop is not even overheating or anything. Ubuntu clearly does not know how to charge a Mac, or am I missing something?

A I recently sent a Macbook Pro with MacOS in for repair for basically 100% this. It has nothing to do with

Ubuntu and everything to do with a failing battery (IIRC). Batteries have a short warranty for a reason.

Erik has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.

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Ubuntu Games: Barony

Written by Erik

Website: www.baronygame.com

Price: \$19 USD at the time of writing.

Blurb: “Barony is the premier first-person roguelike with cooperative play! Adventure alone, or gather a party with iconic and unusual RPG classes to face off against the brutal dungeons. Test your resourcefulness, wits, and friendships, on your quest to lift the evil lich’s curse!”

Barony is a game that has been in development for a long time (from around 2015). The Kickstarter campaign ended at the end of 2020. If you managed to pick it up in the humble bundle like me, you would have got it on the cheap. Honestly, I never gave this the time of day, due to the ugly low-quality graphics. However, I was talking to a friend, who jumped through hoops to play Daggerfall Unity with all the new mods, going on about how much fun it is. For those of you who don’t know, Daggerfall (Elder scrolls II) is free to play on Steam (the original). The problem is that it is Windows-only, and the new Unity version (1 January 2024) is finicky as all hell. I recall playing Daggerfall on my 486 PC and not really being impressed with it for the same reason.



Since we both had Barony, we decided to play it one Saturday evening. I expected it to be a snooze-fest, but since we caught up on life, the universe, and everything, during our gaming sessions, I did not mind (we live too far apart to go grab a drink). So, into the dungeon we ventured. The first thing I noticed was the version tag. It seems the developers keep working on it, and if it is a passion project, I should take more notice, and so should you. I looked into the updates and it is more active than a lot of games, see for yourself: <https://store.steampowered.com/news/app/371970?updates=true>.

Barony is a real-time rogue-like rather than being turn-based, like a classic rogue-like should be, but if you'll be playing with friends, it has to be. You can play with up to four friends at once. You can even play split-screen, where the display is divided up into quarters and you can see each the others' point of view. If ever you were nostalgic for Mario Kart...

So in Barony, you are an adventurer who is going down into the catacombs below a Baron's castle. The heinous Baron Herx enslaved Hamlet's people and now he's an awful undead lich. The whole town's been trapped in his massive dungeon for decades and now it's up to a single hero, or a group of adventurers, to confront him in his hellish lair and destroy him forever. Or that is what they claim. Only thing I know is, once in, you cannot just leave, sort of like the hotel California.

In the beginning of the game, you have to pick a race and a class. Standard fare, but in this game it very much matters what you decide on. Each race and class will play differently, and you need to devise a strategy and play accordingly. If you play a human, you need to eat and drink, for instance, so finding food will be a big part of your gameplay. However, if you play as a skeleton, you do not need to worry about food or drink. If you play as an automaton, you need to find magic scrolls and gems to fuel your reactor, so you never get to use any magic. Now, to make matters worse, or better, depending on your point of view, each of these races has a ton of classes. This means that the game has a lot of replayability on top of the already mentioned rogue-like.



Because the game is rogue-like, each run can be very long or very short, depending on the roll of the dice. The game has an even longer list of items than there are races and classes, making the game quite interesting. Leaning back into what I said earlier about choosing your class carefully, if you choose a dumb brute, they will not be able to identify items you find. You will literally need to start at the bottom, by identifying a rock first, to start levelling up your appraising skills, working up to apples, etcetera, before you even have a chance of identifying any weapons or armour. It sounds simple, but it can take you several dungeon levels to even find those items, so be careful what you pick. This auto-identify mechanic is something I really like about this rogue-like. Hunting for scrolls of identity was never fun for me. This explains another thing I like about the game, you level up a skill by doing. The more you cast your fireball, the better you get at casting fireballs.

The main game loop per level is simply to find the hatch going down, and then going down said hatch. Sounds simple? The level is actually a maze, filled with monsters and occasional events. I say occasional, as it is RNG-based. These events can have quite an influence on how you play that level. Unlike some other 3D dungeon crawlers, you do have a mini-map that fills out as you traverse the level.

Because the game is voxel-based and probably in a 320x200 resolution, scaled up, it is as smooth as butter, at the cost of visual fidelity. Since the requirements are so low, playing multi-player games on even a moderate to low-spec machine is

not a strain on the computer or network. I feel that if the elements within the game were not made of voxels, you would have Minecraft.

The music in the game is by Chris Kukla, (<https://www.youtube.com/watch?v=lymDwAP44g4>), and if you listen to his Bandcamp album, you will know why he was chosen. (<https://chriskukla.bandcamp.com/album/dungeon-jams>). The game just uses this Dungeon jams album as the soundtrack, but as you can hear, it is not a bad thing!

Issues & tissues with Ubuntu higher than 18.04: When starting the game, it displays a critical error message and does not start; the console complains “Failed loading libpng12.so.0”.

Solution:



Comments or questions: misc@fullcirclemagazine.org

Erik has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.

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The current site was created thanks to **Lucas Westermann** (Mr. Command & Conquer) who took on the task of completely rebuilding the site, and scripts, from scratch, in his own time. The Patreon page is to help pay the domain and hosting fees. The yearly target was quickly reached thanks to those listed on this page. The money also helps with the new mailing list that I set up.

Several people have asked for a PayPal (single donation) option, so I 've added a button to the right side of the website.

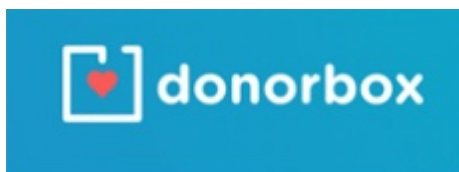
A big thank you to all those who've used Patreon and the PayPal button. It's a HUGE help.



<https://www.patreon.com/fullcirclemagazine>

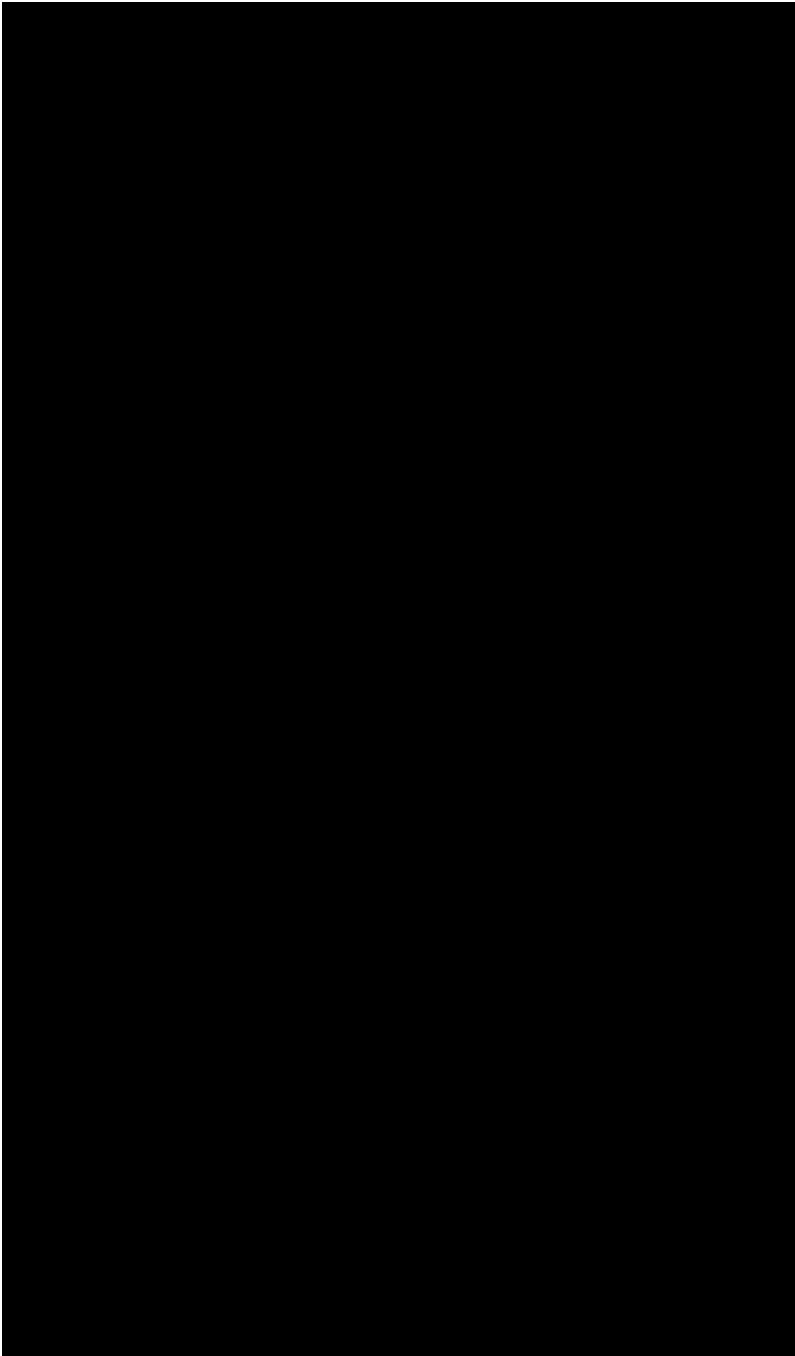


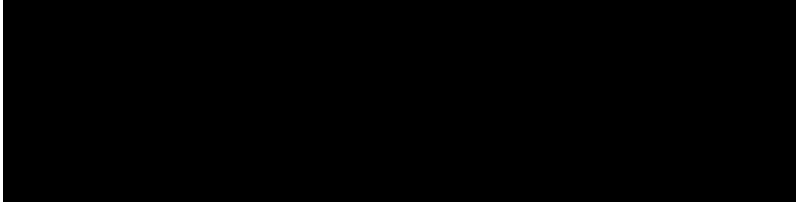
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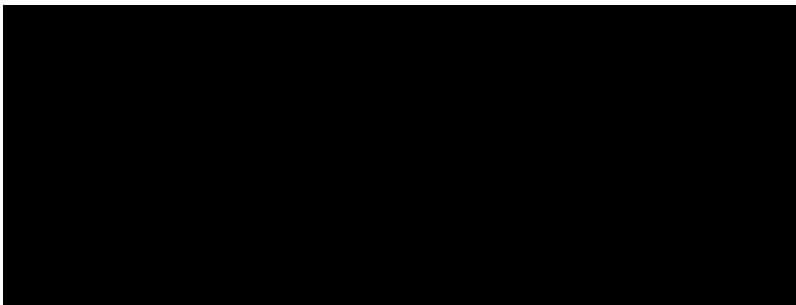
Monthly Patrons





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2024:



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